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Teachers College Record

Edited by DEAN JAMES E. RUSSELL

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TEACHERS COLLEGE RECORD

VOL. XVIII SEPTEMBER, 1917 No. 4

ECONOMY IN SCIENCE TEACHING*

By OTIS W. CALDWELL

Professor of Education and Director of The Lincoln School, Teachers College

The topic assigned to me will be discussed with particular reference to the Junior High School period. It would be desirable that we discuss the minimum essentials in science, or methods of testing results in science teaching, but in neither of those topics has experimentation proceeded far enough to justify discussions of a very positive nature. Your attention is directed to certain tendencies in high school practice, as these tendencies relate to two of the many possible subdivisions of the whole topic.

I. THE PRESENT AND RECENT SITUATION IN ORGANIZATION OF SCIENCE COURSES

One of the best, most renowned, and most highly esteemed scientists of a generation now almost gone, when speaking upon the teaching of botany to a group of secondary school teachers who were gathered as a section of the National Education Association, made the following statement:

"No matter how long or how short the first course in botany is, nor the age at which the first course is taken, nor the relative favorableness of equipment of the laboratory, or experience of the teacher and pupils, the first course should begin with the simplest one-celled plants, and end with the highest composite flowering plants, and as much intervening material should be

*A paper which was read before the Department of Superintendence, Kansas City, Missouri, February, 1917.

presented as the various limiting factors will permit." This statement was a clear exponent of the point of view that recognized in plant life the wonderful story of plant evolution. As plants have met the demands of their nutrition and growth, their reproduction, and responses to the exigencies of their physical environment, they have gradually become more and more complex. We may select type plants, which will illustrate in a more or less imaginary way, the order of progress of plant evolution, and this kind of study furnishes the mature botanical student with so important and so stimulating a means of organizing his botanical experiences and observations that he directly concludes that the same basis of organization is best for the immature person, who is in the beginning stages of his consideration of plant life. According to that plan, it is of greatest importance to present the system of organization, and to build as much vital flesh upon this skeletal system as the various limiting factors in a course of study will permit.

In a similar way, other sciences have gradually developed their systems of organizations, systems which are quite essential to the necessary scope, refinement, and accumulated knowledge in each science. As the extensive and highly important advance of science has gone on, each of the major achievements has found a place in the system of organization which is peculiar to the particular science. In most elementary courses of study in any of the sciences, there is surprising completeness with which the topics of the whole science are represented. This is true both as to the orderliness of the system of organization of the science, and as to the inclusion, at least by mention, of each of the topics which are regarded as essential to the science as a whole.

This situation may be illustrated in a form which is more extreme than is usually true, by citing the case of physiography, and by taking two courses as outlined in text-books—one for college and one for high school. The courses selected are pretty generally recognized as unexcelled in their presentations of the science of physiography. We may, therefore, be free from any implications of criticisms upon an unusually superior presentation of the science as a science.

It is stated in the preface of the college book that the course is designed for use in college. The same author in his presenta-

tion of the same subject, for use in high schools, states in the preface of that book that it is designed for use in the first year of the high school. There is, therefore, a difference of from four to six years in the age of students in mind in the two cases, and more important differences in the social, intellectual, and educational composition of the two groups. In the case of the high school course, it is frequently if not usually taken by pupils who in the first part of their high school experience are required to study the subject. In college the subject is elective to students whose experience and training lead them to conclude that they want this subject. The college course is presented in twenty-six chapters, with a total of 770 pages; the high school course is presented in twenty chapters, with a total of 531 pages. The similarity of topics of the high school book, with those of the college book, is shown as follows:

(1) Seventeen of the chapter topics of the high school book are the same as seventeen of the college chapters.

(2) "Relief Features and Origin" and "Origin and History of Physiographic Features," which appear as two chapters in the college course, appear as one chapter in the high school course under "Relief Features."

(3) "The Ocean," which is treated in the college course as a separate part of the book in seven chapters, is treated under the heading of "The Ocean" in one chapter in the high school course with each of the chapter topics of the college course appearing as subdivisions of the one chapter in the high school course except the first subdivision is called "The Ocean as a Whole" in the high school course instead of "General Conceptions" as in the college course. Thus in nineteen of the chapters in the high school course, each of the twenty-six divisions of the college course appears in the same order, with the same kind of content as in the college course.

(4) The remaining one of the twenty chapters of the high school course consists of a topic not presented in the college course—"The Effect of Physiography upon Plants and Animals," the topic in physiography which is of most interest to high school pupils.

It is evident that the author of these scientifically unexcelled presentations of physiography, in both cases, has highest regard

for maintaining the completeness of the system of organization of his science. The course designed for the general education of the great body of high school students differs from that designed for those college students who decide to elect work in this subject, only by the fact that less is said about the topics in the high school course, apparently on the theory that the less said the better understood, which in some cases may be true.

The similarity of organization of courses in sciences for high schools and for colleges has, until recently, at least, been quite general, and these courses have usually involved presentation of the system of organization and the topics of the sciences as they are seen by special students in the sciences. Major attention has been given to *faithfulness to the science* to make sure that those who study it do no violence to the science by *partial contacts* with it. Furthermore, as the sciences have become more and more differentiated, each new science, with its own system and content, has been passed down to young students. For example, in an article discussing the sciences in one hundred Iowa high schools, E. E. Lewis reports that eleven different science subjects are presented; and in the high schools of Illinois, at least three more science subjects, or fourteen in all, appear.

Additional evidence regarding the situation is shown when we note that in the one hundred high schools discussed by Professor Lewis,[1] two of the eleven subjects are in one school or another distributed in all four years of the high school, and also in the eighth grades; and six of the other subjects appear in two or more high school years. Such facts are well known in high schools throughout the country, and abundant specific information is available on this point.

These facts, and many others, make it appear that one of the following conclusions should be made:

(1) That the type of science course which presents a systematic view of the science as a whole, such as is given in college, is best for high school pupils, and that in most cases this science may be studied profitably in almost any school year;

(2) Or, that we should recognize that young pupils have special needs of education by means of science, and should use

[1] Lewis, E. E. *School Review* 24 : 1916.

whatever science materials we may find appropriate to meet these needs, regardless of the system of organization or content of any specialized science.

Our practices have been wasteful at a time when all the world of common people use common science almost all the time. We have been teaching highly specialized science, which only high specialists can use. We need more science, but fewer sciences.

II. Tendencies in Reorganization of Science Courses

As a matter of economy, we need to save part of the time too often consumed in studying technical details, but as a still more important economy of educational opportunity, we need to give a general foundational training by using as the basis, the science topics of the home, community, and common industries, of personal health, and of civic relationships. This movement for reorganization of the general foundational work in science has been the most important one in science of the last ten years, and in most places has taken the form of a course in general science. That this type of course is recognized is shown by investigations in California, Iowa, Massachusetts,[1] and Pennsylvania.[2] Of 196 California schools reporting, 99 are teaching general science, of 184 Massachusetts schools 161 are teaching general science, while in Iowa[3] and Pennsylvania, although the reports are less complete, over 100 schools in each state are teaching general science.

In California, Iowa, and Massachusetts, the administrative officers gave opinions as to whether this course is more effective and economical in time, as an introductory course, than specialized science. Of 459 so reporting, 414 regarded the course as more effective than courses previously taught in first year high school, and 45 did not.

We have too often taught science as if the pupil could not gain enough of an idea of a given topic to enable him to understand it, use it, and enjoy it, unless he came into possession of all known facts regarding this topic. Doctor Dewey's statement that

[1] Taylor, A. R., "Investigations Regarding General Science," *School and Society*, 1916.

[2] Rusterholtz, John, "A Study of General Science in Pennsylvania," *General Science Quarterly, 1;* 1917.

[3] Lewis E. E., *loc. cit.*

too many teachers suffer from the malady of total recall is applicable to science teachers. The youngest student of the earth's surface can easily distinguish the hill top from the valley, but when required to make careful technical measurements to show where hill slope stops, and valley begins, he loses his distinctions; loses his view of both hill and valley; is himself lost in the technique which could properly concern only a more advanced student; and loses his interest in studying hill and valley.

A young student can distinguish a cow from a tree, but when forced to analyze the minute distinctions between the lowest animals and lowest plants, he fails in the attempt, and loses his interest in cows and trees. When we desire to use the suburban train to go from our homes down town we need to know a good many general things about the structure and manipulation of the trains—where the stations are, what tickets to buy, how to enter and leave the train with safety. For the sake of general intelligence, social contact with fellow men, and for ability to help toward a better public health, we need to know some other things, such as what a locomotive is, why and how excessive smoke from locomotives should be avoided, etc. But imagine a railroad company insisting that before we can make proper use of the train we study the engineer's plans for roadbed and track construction, the details of engine construction, or the conductor's system for giving reports of the day's business. We need just enough knowledge of the road's structure and manipulation to enable us to use the road intelligently, to enable us to enter into discussions with our fellows about the road, to enable us to assist in seeing that the road and the community give one another proper treatment. While I and a hundred of my fellows are gaining this general, personal, civic, and social knowledge of the railroad one or two of our number may become interested in road or locomotive construction and proceed to study as specialists, and may eventually become contributors to the force of construction engineers; perhaps even improving the present practice in road engineering, thus having become productive specialists in engineering, or inventors of railroad appliances.

It is so in hundreds of applications of modern science. Most of the people need to know enough of the common manipulations of science to give them intelligent use, to make the learner

civically and socially intelligent. From this general knowledge often the few who have special aptitudes will discover these aptitudes and they become the specialists who proceed to the study of the detailed technique, by means of which they may become real contributors to the field of study in which their interests and abilities best fit them to work.

The wide and significant general contact with science makes of this subject not only one which gives valuable general knowledge and point of view, but like other junior high school subjects, it becomes an opportunity subject. Indeed, from this point of view the whole junior high school may be called an opportunity school.

The movement to reorganize science teaching is, therefore, not one which should inhibit or reduce the work of the specialist, but one designed to use the science of common things with the whole group of pupils, so that there may be a better understanding and more intelligent personal, civic, and social use of science, by studying the significant aspects of significant things, so that pupils of special aptitudes may be discovered and properly directed.

As an illustration of the situation the following statement is selected, and it might be duplicated from almost every other state in the union. In the 1916 Report of the Iowa Committee on Elimination of Subject Matter, it is stated that of all persons in the United States who are engaged in gainful pursuits, 33.2 per cent are engaged in agriculture and 27.9 per cent are engaged in mechanical industries and manufacturing. Among women, of those engaged in gainful pursuits, 31.2 per cent are engaged in domestic arts and 22.4 per cent engaged in agriculture. In this report, speaking of the wealth of Iowa, there appears the following important sentence:

> "A reasonable proportion of the wealth of the state should be dedicated to education, which in turn should seek to accelerate this progress and bring more science and poetry into productive industry."

To follow my point of view, as stated above, it would seem that an Iowa boy or girl, as he rides over his native state and observes the fields of corn and oats, instead of trying to recall technical matters in science should recognize in these plants the agencies by means of which water and carbon dioxide are trans-

formed into foods which, as sugars, starch, or later as more complex foods, are of use to men. Fields of corn and wheat should appear to these boys and girls as results of men's efforts to manipulate plants so that they will better serve the needs of men; and great trunk railway lines should appear to them as agencies which exist only as plants succeed in their work. Imagine, on the contrary, the boys and girls of Iowa as they view the farms, trying to recall the physical coefficient of the plant's absorption of water from the soil, or the details of the chemical formulæ which exhibit the technical steps in production of foods, steps still partly unknown to chemists.

Similar illustrations must occur to all from the science of common life in country and in city. It should be made clear, however, that this is not utilitarian science, in the sense that some have inferred. The things which are about us and with which we work are the things about which we think most, and about which we ought to do our best thinking. We are educated through and by means of significant work. Distant things may be significant, if they are related, but it is because of this relationship that they are significant. The time and space between us and the stars are related things, are highly significant, and few things give the mental pull, or test the imagination better than studies of the stars. But unrelated, non-significant, and static things are relatively uneducative. It so happens that most common science does have a useful relation, and its study should contribute to better personal results, to better utilitarian results. Is there a virtue attaching to non-useful education? Static scholarship has often gone hungry, but effective learning is well fed. Is education to be under penalty because its followers are better able to live? True economy demands more useful education in the broadest sense—people educated to do things worth doing, to think thoughts which they can cash at a world's market, to write beautiful settings of fundamental truth, to paint reality, with the artist's true insight and imagination, to learn to serve fellow men, all of which are the truly practical ends of education.

I have discussed but two of the many important aspects of the present tendencies toward economy in science teaching. It must be obvious to all that another highly important topic for those

interested in science teaching has to do with methods of determining the exact results secured through science teaching; we have methods of approximating the types of outcome from reading, spelling, writing, and arithmetic; but as yet no one has published any adequate tests for scientific teaching. Science has not established any definite standards of attainment for any given period of school life, and of course has no accurate means of determining whether such standards have been reached. There is great need for standardized measures in science.

Notwithstanding the absence of specific technical tests, upon which most of our educational faith of to-day seems to hang, some science teachers have produced non-standardized tests of the greatest importance—the tests of accomplishments under the conditions of practical life. The Corn Clubs, the Garden Clubs, Pig Clubs, and Canning Clubs have interested many thousands of boys and girls in the use of science, and our best standards of attainment have been set by these boys and girls. In South Chicago, Illinois, 2,500 boys and girls, almost all of adolescent age, did home garden work last year under expert supervision. They learned control of science as they produced flowering plants, decorative vines, or foods for their tables. They were profitably occupied with work which interested them. They used hands, eyes, their friends, and books in their attempts to control forces, with a result which surprised the most hopeful, and gave many of the workers ambition and purpose for further study and work.

The record yield of production of corn per acre in this, a corn country, has for many years been held by school boys who have learned to use science. The girls' canning clubs have canned fruit which is excelled by none. From all over this country there come such reports. Even though as yet we have no recognized and standardized tests of science, if the test of use in dynamic education is a legitimate one, the past decade has begun to meet this test.

WHAT CHINA THINKS OF CANTON CHRISTIAN COLLEGE

The following letters, concerning Canton Christian College, which have recently come into the possession of the editor of the TEACHERS COLLEGE RECORD seem of such an unusual character and of so much general interest that it has been thought well to publish them. As most of our readers know, the relationship between Teachers College and Canton College is very close and cordial. Each year a sum of money is raised at Teachers College to provide for the maintenance of a professorship in education at Canton, and consequently any comment upon the work being done in China is a matter of more than passing interest to our Alumni.

Canton Christian College is part of an effort to found in China a system of Christian schools from the kindergarten to the university which shall stand for the highest standards of educational efficiency and Christian civilization. The present need of China is great; she is in the midst of a vast social and political upheaval and the times call for men who are physically and mentally equipped to deal with the multitudinous complications of the day. The crisis calls, too, for leaders in the new China who shall be in cordial sympathy with the best that American idealism and American democracy have to offer. To meet this demand adequately Canton Christian College needs more men and more money, and for these it must in large part look to its friends in the United States. The following letters testify to the high regard in which Canton College is held at home; and they are published now in the belief that they will increase the number of those here in the United States who already believe in and actively support the cause of American education in China.

Peking, April 6, 1917

My dear President Edmunds:

I received some days ago your very welcome letter in which you speak so pleasantly of my recent visit to the Canton Christian

College. In reply I wish to take this opportunity of expressing to you the high opinion which I formed regarding the work which your institution is doing.

Before coming to Canton I had repeatedly heard expressed the opinion that the Canton Christian College was in the very forefront of the higher institutions of learning in China, and I can now see the substantial basis for this estimate. I was impressed not only with the physical equipment and the personnel of your teaching staff, and the range of your educational activities, but with the fact that you were located in the midst of what is probably the most progressive and intellectually alert portion of the Chinese people—in close touch with those who can appreciate and make use of all the educational advantages which your present or future funds can supply them. This last fact was impressed upon me by what I learned as to the extent to which the Chinese themselves were endeavoring to aid you financially and otherwise. You have also the advantage of being non-denominational. This I consider very fortunate.

I sincerely hope that you will prosper in every way, and I know that you will if you can obtain the added funds which you need in order to enter still more largely upon the broad fields of usefulness which are at your very doors, awaiting occupation and cultivation. The Chinese need and deserve help beyond any of the other peoples of the East, and if this help, financial and personal, can come from the United States, it will be all the more fortunate. . . . The intelligent and patriotic Chinese . . . are eager to cultivate friendly relations with the United States. Those Americans who are acquainted with conditions in the East are equally anxious that this coöperation between China and their own country should constantly increase. And I am struck by the fact that this anxiety is based not simply upon a conviction that the material interests of the United States are bound up with the political independence and integrity of China, but upon a genuine personal liking for the Chinese people, and a respect for the fundamental virtues which are exhibited by the great working mass of her people. I have the feeling, which I find is shared by other Americans with whom I have talked, that here in China there is a wonderful field for educational work—all the necessary elements of industry, native intel-

ligence, and desire for development, and yet a need of outside aid and encouragement in order that the people may be fairly started upon the path of Western intellectual and commercial progress. The opposition to change seems largely overcome, and a respect for Western ideas created, but help must be given if the traditions of the past and the prevailing poverty and ignorance of the masses of the people are to be overcome. . .

You are, of course, aware of these facts, and I am stating them not for your information, but simply to show you how I, and others with whom I have talked, regard the situation, and, therefore, the special regard which we have for the valuable work which your institution is doing. I shall always regard my trip to the Canton Christian College as one of the most valuable and interesting incidents of my stay in China.

Cordially yours,

(Signed) W. W. WILLOUGHBY
Constitutional Adviser to The Chinese Government

OFFICE OF THE PRESIDENT
REPUBLIC OF CHINA

Peking, October 18, 1916

Dr. C. K. EDMUNDS, *President*,
Canton Christian College,
Canton, China.

Sir:

It is a pleasure for me to record my appreciation of the valuable educational service rendered by the Canton Christian College of which you are the head. During the present reconstructive period in China, education lies at the root of everything. To fit men for citizenship under the form of government of which your country is the inspiration, every aid should be summoned to our assistance. The experience of the past has shown that American generosity is never invoked in vain.

I wish you and all those connected with your institution the best success in your worthy efforts to maintain and develop its sphere of usefulness.

Yours faithfully,

LI YUEN HUNG

May 8, 1917

Dr. C. K. EDMUNDS, *President*,
Canton Christian College,
Canton, China.

My dear Dr. Edmunds:

Always a sincere admirer of the spirit and work of the Canton Christian College, I am glad to add a word of testimony and appreciation to those you have already received from the President of China and the Chinese Minister of Education in Peking.

Education is the foundation of true democracy. Realizing the soundness of this principle of free government, the best element of Chinese leadership has been, as you are aware, giving care and attention to this problem of education.

On account of the extent of her territory and the size of her population, however, China has greater educational needs than what her Government and people are able to meet at present. Consequently, there is a far more urgent demand in China for assistance from abroad than in other countries in the Far East where schools and colleges are adequately provided for by the help of their Government alone. I have, therefore, been much gratified to watch the rapid progress of the Canton Christian College, founded and administered by such eminent educators as yourself, and to note the unflagging enthusiasm and ceaseless energy of its authorities to extend and develop its usefulness in a section of China which has produced great national leaders of thought and action for the Republic of the Far East.

As I understand that you are now again touring this country in the interest of the College, of which you are the distinguished head, allow me to convey to you my best wishes for success in your inspiring efforts. Indeed, I feel confident that you will succeed on this mission as on your former missions. While the nonsectarian character of the Canton Christian College may preclude its claim upon denominational mission boards for support, the same fact is likely to inspire large gifts from those who prefer to give in response to urgent needs irrespective of denominational differences. Knowing as I do the needs of China for education and the invaluable work which the Canton Christian College has been and is still doing in this important field of service to the cause

of democracy in China, I am tempted to say that no money could be better used than that which is given for the development of the Canton Christian College.

Yours sincerely,

(Signed) V. K. WELLINGTON KOO
Chinese Minister at Washington

FROM A LETTER BY
A FORMER MINISTER OF AGRICULTURE

Since its foundation, the Canton Christian College has been constantly turning out men of high scholarship, the total number now amounting to many hundreds, of whom a hundred or so have gone to America to pursue courses in the universities and colleges there. This confirms the high standard and excellent accomplishment of the College.

For the purpose of investigating the business and principles of agriculture, and in order to train agricultural specialists, the College has recently gone forward with organizing classes in agriculture, the beneficial results of which will be unlimited in the future.

Now that Dr. Edmunds is anxious to secure greater financial support so as to expand the work of the College, I am specially glad to write these words on his behalf and respectfully to introduce him to those of my countrymen who are enthusiastically interested in education.

(Signed) CHAN CHEN SEN

April 7, 1917

Dr. C. K. EDMUNDS, *President*,
Canton Christian College,
Canton, China.

Dear Sir:

I was pleased to learn that you are about to undertake a special campaign in America to secure additional support for the Canton Christian College, and I take this opportunity to record here the appreciation of many of my compatriots of the work which that

institution has already achieved and their confidence that, with increased help from our American friends, it will assist further to demonstrate the most friendly coöperation of Americans and Chinese.

As a native of Canton Province, I can truthfully testify that the Canton Christian College is doing much to educate and bring out young men in the right spirit and that already there are several of its sons who are taking useful, active and important part in public service where they will help in a large measure to bring Americans and Chinese into closer relations with one another.

You have, therefore, my full sympathy and best wishes for a successful campaign which deserves the support of all American friends.

I am, Dear Sir,

Yours truly,

(Signed) WU TING FANG
Minister of Foreign Affairs

The Office of the Governor
Canton, China

April 7, 1917

Dr. C. K. EDMUNDS, *President*,
Canton Christian College,
Canton, China.

My dear President:

Recently I have had the pleasure of visiting your institution on several occasions, and I have observed that orderliness and decorum pervade the atmosphere of the whole place, that the accomplishments of your school are conspicuous, that the number of students is increasing and that the model plan is being developed. All these are due, I believe, to your whole-hearted effort in planning and organizing and to your ability to execute and carry forward the ideas which you have so carefully formulated. Then the faithfulness and loyalty of those who have been entrusted with the management and discipline of the School are contributing no small share in the success of the work.

I understand that most of your graduates are natives of the province of which I have the honor to be the governor, and I feel it my duty to express to you on behalf of the people of Kwangtung our heartfelt gratitude. Hearing that you are about to return to your country in the interests of the College, I beg, therefore, to take this occasion to express in writing our deep appreciation of your services to our people, and sincerely hope that you will, when your work in America is done, return as soon as possible to Canton so that we may often have the pleasure of seeing you and of receiving your instruction.

With high regards,

Yours very respectfully,

(Signed) CHU CHING-LAN
Civil Governor of Kwangtung Province

Note. This letter was accompanied by a personal subscription of one thousand dollars to the College.

LETTER FROM THE MINISTER OF EDUCATION

Board of Education
Peking, October 14, 1916

Dr. C. K. EDMUNDS, *President*,
Canton Christian College,
Canton, China.

Dear Sir:

Since the reform of the educational system in this country, we owe a great deal to friendly nations for their advice and guidance. This is especially true of the American people who are particularly enthusiastic about the establishment of schools and colleges for our student body at large. Such institutions are now being founded all over the country. The Canton Christian College which you have organized is an example of one of them.

The good reputation of this College has long been known to every part of the country. Up to the present time, a large number of students have received their education from the same. That the institution is of a high standard is attested by the mere fact

that its students are especially successful in passing the entrance examinations to other institutions of learning.

Upon receiving the book of views about the College, I have looked them over and over again with great pleasure and interest. The magnificence of its general lay-out and the thoroughness of its training are things hard to be found equalled elsewhere. And, furthermore, it is interesting to know of your plan for extension in the near future. All of these are good indications of the great interest and effort expended in this institution through you and your colleagues, a deed to be congratulated and admired.

Being the Minister of Education, it is especially fortunate for me to be acquainted with you and to learn all the details about the College. In order to express my appreciation for your kindness and admirable work, I hereby send you this short note.

With the best compliments of the season,

(Signed) FAN YUEN LIEN

Legation of the
United States of America
Peking, April 9, 1917

Dear Dr. Edmunds:

I was much impressed during my recent visit to Canton by the work which has been accomplished by the Canton Christian College, and by the great possibilities of influence in the future which the College has. I was surprised to see the high regard which the Chinese officials and merchants already feel for the institution as shown by their contributions and still more by the fact that they are sending their sons in such numbers to you for training. The Cantonese among whom you are working are brighter and mentally more alert than any other section of the Chinese population. They are now playing an important part in the modernization of the country and are destined to play a still larger part in the future. I thoroughly approve of the breadth of the religious basis of the College. The higher institutions of learning should not be denominational but should stand for the high ideals of our American Christian civilization in a general way rather than for denominational peculiarities. I wish that American philanthropists could realize the enormous importance of

the opportunity which they now have to influence the future of the whole human race by assisting such enterprises as that in which you are laboring. . . . . There is now no work in the whole world so important as that of guiding young China into the path of modern efficiency and at the same time influencing their minds so that they may combine efficiency with Christian ideals of character.

Wishing you all success in your work, I am

Yours sincerely,

(Signed) CHARLES D. TENNEY
Chinese Secretary of the American Legation

A TYPICAL PROGRAM FOR AN ASSEMBLY PERIOD AT THE SPEYER SCHOOL*

By ERNEST HORN, Ph.D.

Professor of Education, University of Iowa

Many requests have been received, from time to time, asking for detailed information regarding the plan by which school assemblies were formerly conducted at the Speyer School. The purpose of the following article is to give this information by presenting the actual program of a typical assembly period; and further, to answer, at least in part, the frequent criticism that assembly programs in general are wasteful of time and that they accomplish no particular good.

The assembly in Speyer School was held every Friday morning, beginning at nine o'clock and lasting for twenty minutes. All of the first six grades, and occasionally the seventh and eighth grades participated. With the exception of such special days as Thanksgiving, Christmas, and graduation, or when an entertainment was given by some one from Teachers College, the program was in the hands of the pupils of some one of the grades. Each grade took its turn regularly; thus an opportunity was given to every class to assume charge of the assembly four or five times in the course of a year. Usually the program was arranged as follows: A song by the entire school, the repetition of the Lord's Prayer, another song by the school, the special portion of the program, and a closing song by the school.

In all cases, the special feature of the program was a natural outgrowth of some part of the regular work of the school. Some-

* The references in this account are to the Speyer Elementary School which was closed June, 1915. The school is now conducted as an experimental junior high school by Teachers College and the City of New York, jointly.

In the preparation of the article acknowledgment is especially due for assistance received from a report by Miss Laura A. Gillmore, formerly of the Speyer School and at present a teacher in the Horace Mann Elementary School; and for the account of the Indian dance which was written by Miss Gertrude K. Colby, instructor in physical education, Columbia University.

times this feature was based upon industrial life, sometimes upon literature or history, sometimes even upon physical education. However, little time was given to special preparation for the program. The real work was done in the regular exercises of the class room; and consequently there was nothing comparable to the old-fashioned learning of "pieces." Accordingly, the artificial and formal characteristics which have brought assembly programs so often into disrepute were thus entirely avoided. Especial care, too, was taken to throw the responsibility of planning, and staging the program, upon the pupils of the grade.

It may reasonably be asked whether the themes chosen by the various classes prove interesting in their content and in their treatment to all of the pupils who made up an audience including every one from the first grade to the eighth. This wide range of ages did not prove a serious problem. The children in charge of the program realized the difficulty and for the most part tried to meet the needs of all the audience effectively. The best comment is that teachers and parents, as well as pupils, looked forward to these exercises with genuine pleasure. To show precisely how these programs were prepared, there is given below a complete description of a program on Indian Life as presented by Grade III. The various steps in the preparation are described from reports made by those who had the Assemblies in charge—Miss Gillmore, the teacher of the grade; and Miss Colby, of the department of physical education. To make the description quite complete a stenographic report of the program itself as finally presented, is also included.

This particular program was based upon the study of Indian life as taught in the regular class work in history with the correlated work in industrial arts, language, and physical education. For a further description of the place which the topic of Indian life occupied in the course of study and its relation to other subjects, the reader is referred to the Speyer School Curriculum, and to the TEACHERS COLLEGE RECORD for September, 1915.

Very briefly, the problems taken up in this study were those which confronted the Indians themselves. Particular emphasis was laid upon the manner in which they satisfied their fundamental human needs. What did they eat? What did they wear? How did they build their camp fires, make their pots and rugs,

grind their corn? In a word, how did they *live?* To illustrate these problems various projects were worked out by the children; e.g., clay bowls were coiled; raffia mats and rugs were woven; even a small adobe house and a wigwam were constructed. In this work, the department of fine art and industrial arts coöperated in the making and decorating of the clay bowls. The children also made several water-color drawings to illustrate various phases of Indian life. In addition, the music supervisor taught the children two Indian songs and the department of physical education planned a war dance together with an appropriate pantomimic episode. This dance and scouting pantomime were arranged and taught under supervision by Miss Ella Deloria, at that time a student in the department of physical education, Teachers College, as her problem for practice teaching. In detail the action was as follows:

PANTOMIME—SCOUTING

A scout appears, crouching and looking for footprints. Another follows him. Both show great caution. Scout One finds a footprint in center of room, carefully brushes the loose earth from it, beckons the other. Both examine it closely, listen with ear to the ground, seem to discuss its direction. Scout One rises, unfastens his blanket, which has been tied around his body, swings it, and throws it in the direction the footprint is pointing (i.e., the direction of the final exit). This is a signal to his comrades in ambush. They rush in, to drum beats, with the step used frequently at the opening of war dances. Knees are slightly bent, the body is carried forward, and the heels are raised slightly. The step is short, quick, and shuffling, and the feet never leave the ground. They form a large circle around the footprint.

WAR DANCE

Music: *Scalp Dance*, p. 20, *Airs of all Lands*—Sousa. Carl Fischer, N. Y.

I. Step: Touch right toe forward knee slightly bent (count 1), lower heel (count 2). Same with left foot 3–4.
Right 5–6, left 7–8.
9–16—Same going backward.
17–32—Repeat forward and back.
Drum beats.
With shuffling step used in forming first circle, make small circle, shoulder to shoulder.

II. 1–2—Step sideward right, bend body slightly to the right.
3–4—Bring left foot to right with a stamp, straightening body.
Continue moving around circle to right through ten measures (9–18).

III. Odd number children move to center, examine footprint (2 meas.) striking the ground with tomahawks and yelling sharply "Hi–e!" on the fourth beat of second measure. At the same time the even numbers fall back to large circle. Even numbers go into center with striking and yelling, while odd go out. (2 meas.) This is repeated. (4 meas.) (19–26).

IV. "Indian" step. Similar to a skipping step (hippity-hop), but with high knee action and a very short step, covering little ground.

With this step the larger circle is formed and moves to the right, with occasional leaps, whirls, yells, and brandishing of tomahawks, increasing in speed and excitement. As the first scout comes a second time to point in the circle nearest the direction of the footprint, he breaks away, and followed by all the braves, single file, takes to the "trail" on a run. (27–36 meas. of music). The last four measures should be repeated as often as is necessary to get all the warriors off the floor.

The effect of drum beats may be given by a low A on the piano, with four regular beats to a measure, the first of each being sharply accented.

The work in literature and language was for a time closely correlated with the history. Snedden's "Docas, the Indian Boy of Santa Clara" was used for reading and for reference while the Pueblo Indians were being discussed. Selections from "Hiawatha" were read and dramatized, and some of the parts committed to memory. The folk tales given in Skinner's "European Folk Tales Collected among the Menominee Indians" were also read; and as a language exercise the children composed a short story of adventure which they translated into "Indian writing," using so far as possible the symbols of the Hopi Indians.

In geography, an attempt was made to give a concrete and vivid picture of the physical environment of the various tribes studied. Thus special stress was placed upon climatic conditions in so far as they affected the problems of food, shelter, and clothing; and the more important physiographic characteristics of each region were emphasized. As this work progressed, the children were naturally led to collect objects of genuine Indian workmanship; e.g., beads, an arrow case and arrows, a blanket, small canoes, moccasins, tomahawks, etc. The pupils were also much interested in collecting pictures; and stimulated by visits to the Museum of Natural History they designed a large poster showing an Indian camp together with the appropriate figures

and background. The above work would have been done had no assembly program been contemplated; class exercises were merely utilized for program purposes.

As the time drew near for the third grade assembly, the children chose to give an Indian program. With this problem in mind, all the children reviewed what they had learned and chose those things which seemed to them to be of greatest interest to the other grades. A lesson was devoted to the arrangement of these items, to the choosing of those who were to take part, and to suggestions as to the explanatory remarks to be made to the audience. The special preparation made by the department of physical education has already been described. Aside from these lessons the only extra time given to the preparation of the program was that taken by two rehearsals.

The objects used in the stage setting were in great part those which had been made by the children or brought by them previously to form a part of their Indian exhibit in the grade room. A large wigwam belonging to one of the children formed the center of the setting. Around this were arranged baskets and the large loom. Two large fur rugs, the property of one of the boys, added to the general effect. At the side of the gymnasium grouped in front of a screen were the pottery, houses, and poster which the children had made, together with a collection of objects actually made by the Indians themselves.

The program is described in the stenographic report which follows, with the exception of certain portions, of no interest for the present purpose, which have been omitted.

(The teacher had placed upon the board a list of the things which the children had chosen to use for the program.)

TEACHER: Here are the things which you chose for your program.

TEACHER (*pointing to program on board*): That word "Introduction" means what the first person will say, so that the people in the audience will know what the program is about. Who can read number two?

PUPIL: 2. Song—Miss Latham.

PUPIL: 3. Hiawatha's Wooing.

PUPIL: 4. Description of Indian things.

PUPIL: 5. Grinding of corn.

PUPIL: 6. War dance.

PUPIL: 7. Story—Miss Deloria.

PUPIL: 8. Song.

TEACHER: Now go back to number one. Let each one of you make believe you are the one who is going to give the introduction. What would you say? Think a moment. . . .

PUPIL: What does "Introduction" mean?

TEACHER: I explained that to you. Simply telling the people what the whole program is about.

PUPIL: But there's different things. We are going to have an Indian play. And we are going to have—Shall I say Miss Deloria's song?

TEACHER: Do you think you ought to mention that?

PUPIL: No. We are going to have Hiawatha's Wooing—and I don't know what you are going to have about grinding corn.

TEACHER: We haven't discussed that, have we?

PUPIL: We are going to have a dance, and a woman from College will come and tell us an Indian story.

TEACHER: What do you think of this: having the first person just make a general statement, and say our program will be an Indian program, and let it go at that?

PUPIL: Yes, I think that would be all right.

TEACHER: What would you say?

PUPIL: This morning we are going to have an Indian program.

TEACHER: Because—?

PUPIL: Because we have been studying it.

TEACHER: Do you think it would be well for the first person to say something about Miss Latham's song? She won't want to begin her song without some kind of an introduction.

CLASS: Yes!

TEACHER: Then add that to your speech.

PUPIL: This morning we are going to have an Indian program because we have been studying about the Indians, and Miss Latham is going to sing us a song.

PUPIL: Sing *you* a song.

PUPIL: Yes, she isn't going to sing *us* a song. We're giving this for the audience.

TEACHER: Why not leave out both *us* and *you?*

PUPIL: This morning we will have an Indian program, because we have been studying about Indians. Miss Latham is going to sing a song.

TEACHER: Then Miss Latham sings her song. Now we come to Number Three—"Hiawatha's Wooing." How much of an introduction does that need?

PUPIL: Just tell what it is. Because they all know Hiawatha. Just say, "The next thing will be 'Hiawatha's Wooing'."

PUPIL: The one that says the poem can say, "We are going to have 'Hia watha's Wooing'," and then go on and say the poem.

TEACHER: Do you think it is necessary to say anything before the name of it?

PUPIL: Just "Hiawatha's Wooing."

PUPIL: I think we ought to say something about the people in back that are doing motions, because they might not look at them at all. They might think they were just walking across because they had to do so.

TEACHER: Do you agree with that?

PUPIL: The one who is going to say the poem will tell about that.

TEACHER: How much will that person tell, Herbert? Do you think it is necessary for him to say anything more than "Hiawatha's Wooing"? How many think anything more? It seems to me that is plenty. Number Five. Wesley, will you tell us about the stone your father is making for our mill?

(This discussion of the method of grinding corn is omitted since it is properly a part of the regular work in history.)

TEACHER: Now, Number Six, the War Dance. How shall we tell the people what sort of a dance that is?

PUPIL: We are going to have two scouts going out looking for different trails.

PUPIL: I should have, "We are going to have a real Indian war dance showing how we found the trail, and have a real Indian war dance around it."

TEACHER: Who else wants to try? It isn't quite satisfactory yet, it seems to me.

PUPIL: We are going to have a war dance. The two scouts found a footprint which they think has been made by an enemy. One takes the blanket off him and throws it up, and all the other Indians come and begin to dance.

TEACHER: Good for you! You told what they found first, and then told about the dance. How are you going to get Miss Deloria to tell her story?

PUPIL: We could make believe she is our mother, and someone could say, "Oh, mamma! Please tell us a story."

TEACHER: You could just say, "Please tell us a story." Perhaps Miss Deloria wouldn't want you to call her "mamma."

Now, boys and girls, you have brought in Miss Deloria. She has told you a story, and you are going to end the program with a song. Do you want to make a speech about it, or do you want to say to each other, "We will sing a song about the birds' nest"? How many vote for the first? How many for the second? All right. Then you will just say to each other: "We will sing a song about the birds' nest." Who would like to say the introduction? Who would be a good one?

PUPIL: Edwin.

TEACHER: Edwin is going to give "Hiawatha's Wooing."

PUPIL: I think Jessie.

TEACHER: Jessie is going to be the Arrow-maker.

PUPIL: Dawes.

DAWES: I am going to play in the game.

TEACHER: Why didn't someone tell me? I left out the game. Where shall I put it?

PUPIL: Right after Miss Latham's song.

PUPIL: After "Hiawatha's Wooing."

TEACHER: That seems to be the place to me. Now, who shall give the introduction?

PUPIL: Herbert.

PUPIL: He's in the game.

TEACHER: Each of you is in something.

PUPIL: Consuelo.

CONSUELO: I don't think I could tell it.

TEACHER: I am sure you could! Now, what people are in the game? Whom shall we have for Number four. To give a description of the Indian things? That is the hardest thing of all.

PUPIL: Clement.

PUPIL: Edward.

TEACHER: Who knows the most about Indian things?

PUPIL: Arthur.

TEACHER: Arthur, would you like to be the one?

PUPIL: I don't think he would be, because he wouldn't talk loud enough.

PUPIL: I think Arthur would be a good one, because when he said that poem he said it good and loud.

TEACHER: It seems to me that Arthur would be a good one. Whom shall we have to grind the corn?

PUPIL: Wesley.

PUPIL: Wesley is a boy!

TEACHER: That's true. The women ground the corn.

PUPIL: I think Eleanor would be good.

TEACHER: How many vote for Eleanor? Now, who shall be the one to say, "Let us sing an Indian song?"

PUPIL: Adrienne.

TEACHER: Does any one want to ask a question?

PUPIL: You left out the dance.

TEACHER: The introduction to the dance. Whom do you want for that?

PUPIL: Edward.

TEACHER: Any other questions?

PUPIL: Are you going to tell us what we should say?

TEACHER: No! You must figure that out for yourselves.

SCENE FROM THE INDIAN PROGRAM, SPEYER SCHOOL ASSEMBLY

INDIAN PROGRAM

(*Children, dressed as Indians, march in.*)

PART I

PUPIL: We are going to have an Indian program, because we have studied about Indians. Miss Latham will sing an Indian song.

MISS LATHAM: This morning I am going to tell the people here just what I told the children Friday morning. The name of the song in English is "Look Up!" and it is what the Indians said when they were having a very important meeting and some of the little papooses woke up and disturbed what was going on. Men called priests were supposed to quiet the papooses, and they had long poles from which were hung beautiful feathers, in beautiful colors—some of them, I imagine, were gilded—and they held them this way and swayed them over the little papooses' heads and sang this song, which was supposed to quiet the children, and they would go on with the ceremony.

(MISS LATHAM SINGS AN INDIAN SONG)

PART II

PUPIL: "Hiawatha's Wooing."

(*Scene opens with two children, representing the* ARROW-MAKER *and* MINNEHAHA *sitting on a fur rug outside a wigwam.* MINNEHAHA *is weaving. Her father, the* ARROW-MAKER, *is making arrows. As one pupil gives the following selection, these two, with* HIAWATHA *who enters at the appropriate time, present it in pantomime.*)

At the door-way of his wigwam
Sat the ancient Arrow-maker,
At his side, in all her beauty,
Sat the lovely Minnehaha,
Sat his daughter, Laughing Water
Plaiting mats of flags and rushes:
Of the past the old man's thoughts were,
And the maiden's of the future.
She was thinking of a hunter
From another tribe and country,
Young and tall and very handsome,
Who one morning in the Springtime
Came to buy her father's arrows,
Sat and rested in the wigwam,
Lingered long about the doorway.

* * * * * * * * *

Suddenly from out the woodlands
Hiawatha stood before them.

Straight the ancient Arrow-maker
Looked up gravely from his labor,
Saying, as he rose to meet him,
"Hiawatha, you are welcome."
At the feet of Laughing Water
Hiawatha laid his burden,
Threw the red deer from his shoulders;
And the maiden looked up at him,
Looked up from her mat of rushes,
Said with gentle look and accent,
"You are welcome, Hiawatha."
Then up rose the Laughing Water,
From the ground fair Minnehaha,
Laid aside her mat unfinished,
Brought forth food and set before them,
Water brought them from the brooklet,
Gave them food in earthen vessels,
Gave them drink in bowls of basswood,
Listened while her father answered,
But not once her lips she opened,
Not a single word she uttered.

* * * * * * * *

"Give me as my wife this maiden,
Minnehaha, Laughing Water,
Loveliest of Dacotah women."
And the ancient Arrow-maker
Paused a moment ere he answered,
Smoked a little while in silence,
Looked at Hiawatha proudly,
Fondly looked at Laughing Water,
And made answer very gravely:
"Yes, if Minnehaha wishes:
Let your heart speak, Minnehaha."
And the lovely Laughing Water
Seemed more lovely, as she stood there,
Neither willing nor reluctant,
As she went to Hiawatha,
Softly took the seat beside him,
While she said, and blushed to say it,
"I will follow you, my husband."
This was Hiawatha's wooing.
Thus it was he won the daughter
Of the ancient Arrow-maker,
In the land of the Dacotahs.
From the wigwam he departed,
Leading with him Laughing Water;
Hand in hand they went together,

Through the woodland and the meadow,
Left the old man standing lonely
At the doorway of his wigwam,
Heard the Falls of Minnehaha
Calling to them from the distance,
Crying to them from afar off,
"Fare thee well, O Minnehaha."

(HIAWATHA *and* MINNEHAHA *walk from wigwam off stage.* ARROW-MAKER *watches them depart, and then retires to his wigwam.*)

PART III

(*As pupil names articles, he shows them to audience.*)

PUPIL: This is an Indian canoe, made by Indians in the upper part of Canada. This is a stone axe that they killed things with, and with this part they ground corn. This is an Indian pocket-book made out of beads. This is an Indian chain made out of beads. This is an Indian arrow case and these are arrows. This is an Indian brush and this is a little Indian house we made. These are spear heads, and this is an Indian rope, and these are Indian dishes we made. And this is a real Indian blanket, woven by the Indians out of wool.

(*Pupil spreads blanket on the floor, and goes to* MISS DELORIA, *who is dressed in her Indian costume.*)

PART IV

PUPILS: Oh, do tell us a little Indian story!

(*The children group themselves around* MISS DELORIA, *who then tells an Indian story.*)

THE BABY'S WAR CRY

When white people tell their children stories and fairy-tales, they begin by saying, "Once upon a time." But with us Indians, it is otherwise. Whenever we tell a story, we begin by saying, "My grandmother told me."

If you were to visit with me an Indian camp, these are some of the things you might see. After the sun has set, and the evening meal is over, the older people gather in a group around the camp fire for a friendly chat that often lasts far into the night. Oft to one side you would see a different group. It consists of the wise grandmother, and anywhere from six to twenty little Indian children. They usually lie wrapped up in blankets, on the ground near the grandmother, while she tells them the most wonderful stories, all about the magic people, and the animals, and the stars. Now you see why we begin our stories as we do?

One evening, after a sultry summer day, when we all came in hot and tired, from our play, "my grandmother told this story."

There was once a famous Indian Chief named *Mahto Zi*, who was also a brave warrior. He and his tribe had been attacked so often by the cruel people of the North, and by the beasts of the wood near by, and by the magic little people of the caves, that finally he decided to go to war himself. He planned and led war-parties which soon subdued all the enemies, and there was peace and prosperity in the land.

The people sang the praises of *Mahto Zi*, day and night. Those who had seen him in battle declared that his bravery surpassed that of the spirits. The women pronounced him the kindest ruler in the land. And both men and women made up a song about him which said, "No tribe since these hills came to be has been so blest as ours. No ruler is to be found who is like our chief."

Then something happened. It is too bad, but it is true, that glory and praise often make a man vain. *Mahto Zi* became vain. He said to his herald: "Mount your pony and ride around the camp, and cry: 'Our chief is the most powerful man in the world. He can conquer any one'." The herald did as he was told by the chief.

Away to the North, on the very edge of the camp, lived an old woman. People called her "the wise woman." She never feared to speak her mind.

When she heard the herald's cry as he rode by on his Indian pony, she said: "Our chief is mighty. But I know one who is mightier still."

Of course all who heard her were indignant. They ran to the chief's lodge and told him of the wise woman's insolence.

"I will go to see her, and find out who this person is who is mightier than I," he said. So he put his robes about him and went to the lodge of the wise woman.

She was very much pleased when she saw the powerful chief coming to her door. She spread her handsomest buffalo-robe in the back of the tipi, facing the door-way, which is the place of honor, and led him to it.

"Grandmother, tell me who this mighty one is," said *Mahto Zi*.

"Ah, there he is!" She pointed to a certain place in the wigwam.

The Chief looked, and what do you think he saw? Why, a chubby brown Indian baby, seated on a blanket, sucking his maple sugar!

"Baby, come here," said *Mahto Zi*, smiling and beckoning to *Nasis*, for that was his name. But *Nasis* laughed and kept on sucking his maple sugar.

The chief, who had never been married, and knew nothing about babies, frowned, and his eyes flashed with anger. He thought he could overcome *Nasis* by his will.

In a loud, angry voice he shouted, "*Nasis*, come to me!"

Nasis opened wide his mouth and screamed and cried and kicked his little feet.

"This *is* wonderful!" said *Mahto Zi*. "No one of my people dares disobey me, but this tiny little man not only withstands me, but even cries his war-cries at me. I will conquer him with my magic."

The big chief danced and sang and waved his magic bag in front of the little baby. He danced hard and long, and at last sat down, entirely worn out.

And all the while *Nasis* sat there laughing, enjoying the dance and his maple sugar.

"What did I tell you?" said the wise woman. "You are mighty, but he is mightier. And not only he, but also every baby; for we can not tell what they may become when they grow up into manhood."

"It is even as you told me, grandmother," sighed the warrior-chief as he sadly rose and left the tipi. As he walked away, he heard *Nasis* calling after him, "Goo, Goo, Goo!"

Now when you hear the babies saying "Goo, Goo, Goo" you will know that it is their war-cry, and that with it they defy all who try to overcome them. For all babies use the same war-cry, no matter what their color may be.

PART V

PUPIL: Oh, let us sing the song about the Indian and the owl! (*Children sing an Indian song.*)

PART VI

PUPIL: This will be a game called "Sticks," the object of which is to kick your stick over to this goal and back to this, and the one who holds it up first wins.

(*Children form two teams and play match.*)

PART VII

(*Demonstration of method by which Indians made Indian meal.*)

PUPIL: This is the way an Indian woman grinds corn. They put the shelled corn on this stone, and with the other stone they grind the corn until it is fine.

PART VIII

PUPIL: The next will be an Indian war dance. Two scouts on the trail find a footprint which they think is one of the enemies. They call the other Indians and then we have our war dance.

(See description of War Dance as given on page 333.)

(*As the climax of the war-dance the children ran out of the assembly room to their own rooms. This last episode concluded the assembly and the regular program for the day then followed as usual.*)

In the opinion of the writer such an exercise as the one described above is valuable for many reasons. Real and vital

motives are provided for work in dramatization, and for composition, both oral and written. The pupil is trained to be at ease and to express himself freely before large groups of people. A feeling of responsibility and a need for coöperation are developed in all the children who take part in the program. Thus there is provided an admirable device for producing and maintaining a spirit of unity throughout the school. Finally, the assembly is genuinely educative in a larger sense, for it not only entertains and instructs those who participate, but the audience as well.

THE POSSIBILITIES OF ROASTS

(Continued from the March number)

By DAY MONROE
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In the TEACHERS COLLEGE RECORD for March, 1917, a comparison was made between the actual cost of roast beef as eaten at the table and the actual cost of the edible portion of steak, chops, and some of the so-called 'cheaper cuts'. In the present article a study will be made of the relative costs of roast veal, lamb, and pork. The market price of leg of lamb on the day these experiments were made was 23 cents per pound, 7 cents less than the price paid per pound for the beef. The first question is: Was this lamb as served actually cheaper than the beef? The pork roasts were 26 cents per pound and the veal 32 cents per pound. But the housewife will next ask: Just what did these roasts really cost per pound, estimated on the basis of the amount of each which was actually eaten at the table? The purpose of this article is to give a careful and detailed answer to these questions.

To begin with, a reference to the table on page 347 will show the comparative weights and costs of each of the six roasts which are considered in this experiment.

It will be readily seen that the roast having the highest cost per pound of edible portion was veal roast No. 1, at 81 cents, while the edible portion of the other veal roast cost only 47 cents per pound, this being the cheapest roast used in the experiments. This wide variation is due to a difference in the cuts of meat used in the two roasts. With veal roast No. 1 there was a heavy discard after cooking, the large bone and non-edible portion being a third of the weight of the roast as purchased. In veal roast No. 2, the bones were small, light in weight, and there was prac-

tically no other waste. The point of this comparison between veal roasts No. 1 and No. 2 is that the housewife need not keep veal off her menus, even though its market price is higher than that of other meats. She should rather use care in choosing a roast in which there will be only a small proportion of waste.

It might also be recalled that the three beef roasts which were discussed in the March RECORD, were as nearly alike as they could be purchased, all being rib cuts. The results of that experiment were correspondingly uniform for the cost per pound of the edible portion, there being but five cents difference between the cheapest and the most expensive of the beef roasts. Practically the same was true of the lamb and pork. The average cost per pound of the edible portion of beef was 69 cents, of pork 60 cents, and of the lamb 57 cents. Here the market price was really a true index of the actual cost of the meat as eaten, lamb being the cheapest in the market, and also furnishing the lowest cost per pound for the edible portion.

The percentage of bone and non-edible discard from the beef was from 26 per cent to 30 per cent of the weight as purchased. This percentage is about the same as that for loin lamb chops, pan broiled, but is higher than the discard for porterhouse or sirloin steak. For the pork and lamb roasts this discard was about 20 per cent of the original weight of the roasts. However, there is one important point of difference between the discard from the roasts and that from the chops and steak. All of the edible portion of the roast was removed from the bones which were then scraped, and the small fragments of meat used in left-overs; the bones could then be put into the stock pot. But with the chops and small steaks, where the bones were served, they were not scraped. Table etiquette does not provide for such economy, and although small bits of meat remained uneaten, the bones were obviously non-utilizable because of their having been served on the plates.

In the case of the six roasts considered in the present article, the loss by trimming was variable, less than 1 per cent for the veal, and as high as 14 per cent for the lamb. Loss in weight by cooking was about the same for all of the roasts, being from 20 to 25 per cent. This loss in weight by cooking, however, includes the fat and juices in the roasting pan, as well as the moisture loss.

The fat and juices were later used in the left-over dishes, hence this is not an absolute loss, but represents the shrinkage in the roast itself.

These facts are given in greater detail in the table below, in which all six roasts are compared:

COMPARATIVE STUDY OF THE SIX ROASTS

Kind of Roast	Veal		Lamb		Pork	
	No. 1	No. 2	No. 1	No. 2	No. 1	No. 2
Weight as purchased.....	2445	2400	2889	2902	2285	2273
	5.4 lbs.	5.3 lbs.	6.3 lbs.	6.4 lbs.	5.04 lbs.	5.01 lbs.
Weight of trimmings.....	16	26	421	340	263	298
Per cent lost by trimming..	0.6%	1.08%	14.6%	11.6%	11.5%	13.1%
Loss in weight by roasting..	654	560	688	709	639	464
Per cent lost by roasting....	26.7%	23.3%	23.8%	24.2%	27.9%	20.4%
Weight of meat served hot..	146	270	230	226	232	315
Per cent served hot.....	5.9%	11.2%	7.9%	7.7%	10.1%	13.8%
Weight of meat served cold	149	212	173	146	270	170
Per cent served cold.....	6%	8.8%	5.9%	5%	11.8%	7.5%
Weight of meat for left-overs	674	1169	715	866	437	521
Per cent served for left-overs	27.3%	48.7%	24.7%	29.6%	19.1%	23%
Weight of meat eaten (total)	969	1651	1118	1238	939	1006
Per cent of roast eaten.....	*39.3%*	*68.7%*	*38.6%*	*42.3%*	*41%*	*44.3%*
Weight of bone and discard	816	163	662	634	444	505
Per cent of roast discard and bone.....	33.2%	6.7%	22.9%	21.6%	19.4	22.2%
Cost as purchased	$1.73	$1.696	$1.465	$1.485	$1.31	$1.295
Cost per pound as purchased	$.32	$.32	$.23	$.23	$.26	$.26
Cost per pound as eaten.....	*$.81*	*$.465*	*$.594*	*$.544*	*$.631*	*$.585*

(Weights are in grams unless otherwise specified both in the above table and elsewhere throughout this article.)

Veal Roasts No. 1 and No. 2

Veal roast No. 1, in addition to furnishing meat at the highest cost per pound of edible portion, also furnished the highest-priced left-overs. These might be compared with those prepared from the beef roasts. Here the added ingredients were, in every case, cheaper than the meat, the average cost of the materials added being 21 per cent of the total cost of the dish. In the veal mousse, however, the added ingredients cost practically the same as the meat; with the salad and the jellied veal they were about one-third of the total cost. Nevertheless, the left-overs from veal

roast No. 1 were the most attractive of the experiment, especially for hot weather. They offer, too, another example of the high cost of æsthetic satisfaction, for the expensive added materials did not furnish cheaper energy, the cost per hundred calories being also the highest of all the six roasts.

Veal mousse is not an 'average family' left-over. It would only be served occasionally. Jellied veal and veal salad would be more often used, being more practical both from the standpoint of economy of time as well as money.

It should also be noted that the cost per serving for this roast was $.127—*the highest cost per serving.*

The veal hash served from the left-over meat of veal roast No. 2 is not so expensive as the beef hash spoken of in the former article. It is of the type of left-over where less meat is used and more of other less expensive ingredients added; consequently it cost only six cents a serving, while the beef hash cost fourteen cents. Three times as many potatoes were used for the veal hash as in the beef hash, and only three-fifths as much meat. The cost of the added ingredients in the croquettes from this roast was increased because of the peas used as a garnish, and the eggs for egging and crumbing.

SUMMARY OF VEAL ROAST No. 1

Ways of serving	Amount of meat used gms.	Cost of meat	Cost of other ingredients	Total cost of dish	Per cent of cost spent for: Meat	Per cent of cost spent for: Other ingredients
Hot roast..	146	$ .261	....	$ .261	100	....
Cold meat.	149	.267	....	.267	100	....
Veal salad.	219	.392	$ .16	.55	70	30
Veal mousse	216	.386	.377	.763	51	49
Jellied veal	239	.428	.262	.69	62	38
Total.....	*969*	*1.734*	*.799*	*2.53*	*68.5*	*31.5*

	Calories: Number	Calories: Cost per 100
Hot roast	263	$ .099
Cold meat	268	.099
Veal salad	650	.084
Veal mousse	1623	.047
Jellied veal	758	.091
Total from meat	*1744*	*.099*
Total from other ingredients	*1818*	*.043*
Total calories	*3562*	*.071*

	Number of servings	Time of preparation
Hot roast	4	....
Cold meat	4	....
Veal salad	4	14 min.
Veal mousse	4	40 min.
Jellied veal	4	1 hr. 15 min.
Total	*20 (5 meals)*	

	Cost without fuel	Cost of fuel	Cost with fuel
Cost of roasts in forms served	$2.53	$.058	$2.588
Average cost per serving	.127	....	....

RECIPES FOR LEFT-OVERS: VEAL ROAST No. 1

VEAL SALAD—

1 cup veal, cut into cubes
½ cup celery
¼ cup sliced olives

Chill thoroughly. Pour over the mixture a dressing made of four tablespoons olive oil, two tablespoons lemon juice, one-half teaspoon salt, and one-eighth teaspoon pepper.

Cost.....$.55 Calories....650 Number of servings.....4

JELLIED VEAL—

2 cups veal, cut into cubes
3 tablespoons granulated gelatine
½ cup cold water
2 cups stock, cleared and seasoned
1 cup celery
2 hard-boiled eggs
Parsley for garnish

Soak gelatine in cold water for five minutes, add hot stock and stir thoroughly. Cool. When about the consistency of a thick syrup add veal and celery. Garnish mold with hard-boiled eggs cut into fancy shapes, and parsley; dip these decorations into a little dissolved gelatine before placing in mold, so that they will stay in place. Put veal mixture into mold and chill.

Cost.....$.69 Calories....758 Number of servings..4 large

VEAL MOUSSE—

2 tablespoons gelatine
4 tablespoons cold water
1 cup hot stock
¼ teaspoon salt
¼ teaspoon paprika
3 egg yolks
½ cup almonds
1 cup veal
1 cup heavy cream
Cayenne

Soak gelatine in cold water for five minutes. Beat egg yolks slightly, add salt, paprika, and stock. Cook over hot water, as a custard, until the mixture begins to thicken. Add soaked gelatine, and stir until dissolved. Cool, until of a thick, syrup-like consistency; fold in the whipped cream. Add veal, cut into small bits, and almonds. Put into individual molds, and chill until firm.

Cost.....$.763 Calories...1623 Number of servings..7 molds

SUMMARY OF ROAST VEAL No. 2

Ways of serving	Amount of meat used gms.	Cost of meat	Cost of other ingredients	Total cost of dish	Per cent of cost spent for: Meat	Per cent of cost spent for: Other ingredients
Hot roast	270	$ .278	....	$ .278	100%	$....
Cold meat	212	.218	....	.218	100	....
Veal hash	302	.31	$.05	.36	86	14
Blanquette of veal	604	.62	.11	.73	85	15
Croquettes	263	.27	.24	.51	53	47
Total	*1651*	*1.696*	*.40*	*2.096*	*80.9*	*19.1*

	Calories: Number	Calories: Cost per 100
Hot roast	486	$.057
Cold meat	382	.057
Veal hash	1307	.027
Blanquette of veal	1890	.038
Croquettes	1436	.035
Total from meat	*2972*	*.057*
Total from other ingredients	*2529*	*.016*
Total calories	*5501*	*.038*

	Number of servings	Time of preparation
Hot roast	4	....
Cold meat	4	....
Veal hash	6	55 min.
Blanquette of veal	6	50 min.
Croquettes	6	50 min.
Total	*26 (5 meals)*	

	Cost without fuel	Cost of fuel	Cost with fuel
Cost of roasts in forms served	$2.096	$.086	$2.182
Average cost per serving	.08		

RECIPES FOR LEFT-OVERS: VEAL ROAST No. 2

BLANQUETTE OF VEAL—

2 cups veal
5 medium-sized potatoes
1½ cups milk
3 tablespoons flour
3 tablespoons butter
¼ teaspoon salt
Pepper

Reheat two cups of cold roast veal, cut into cubes, in one and one-half cups white sauce. Serve in a potato border. Garnish with parsley.

Cost.....$.73 *Calories*...1890 *Number of servings*.....6

VEAL CROQUETTES—

2 cups veal, cut in very small cubes
2 eggs
2½ tablespoons butter
⅓ cup flour
1 cup milk
2 cups fine white crumbs
Crisco, for deep fat frying
⅓ can peas

Melt butter, add flour, and stir until well blended. Add milk, and bring to boiling point, cooking until well thickened. Add veal and seasonings. Spread on plate to cool. Shape croquettes, dip in crumbs, egg and crumbs; fry in deep fat and drain on brown paper. Serve with a small mound of peas in the center of the platter.

Cost.....$.51 *Calories*...1436 *Number of servings*.....6

VEAL HASH—

2½ cups veal, chopped
3 potatoes
½ tablespoon salt
½ onion
3 slices of bread, toasted, and cut into triangles
¼ cup hot stock
1 tablespoon butter

Cut cold boiled potatoes into cubes. Add to chopped veal and salt. Heat butter in frying pan, add finely chopped onion, and brown. Add veal mixture and stock. Cook for ten minutes. Serve on buttered toast triangles.

Cost.....$.36 *Calories*...1307 *Number of servings*.....6

LAMB ROASTS NO. 1 AND NO. 2

The lamb left-overs were all of a type which would be practical for use by the family. Although the added ingredients furnished a fairly large proportion of the total cost of the dishes, yet this was mainly because of the large quantities used, for the materials in themselves were comparatively inexpensive, being only 1.1 cents per hundred calories. The mock chops with risotto may require more time than the housewife can give, for the shaping and frying are not short processes. Aside from this, however, all of these left-overs are simple to prepare.

SUMMARY OF LAMB ROAST No. 1

Ways of serving	Amount of meat used gms.	Cost of meat	Cost of other ingredients	Total cost of dish	Per cent of cost spent for: Meat	Per cent of cost spent for: Other ingredients
Hot roast	230	$ .301	....	$ .301	100	.....
Cold meat	173	.227	....	.227	100	.....
Chartreuse of lamb	335	.439	$.115	.554	79.2	20.8
Escalloped lamb	380	.498	.08	.578	86.2	13.8
Total	*1118*	*1.465*	*.195*	*1.660*	*88.2*	*11.8*

	Calories Number	Cost per 100
Hot roast	437	$.069
Cold meat	329	.069
Chartreuse of lamb	1606	.034
Escalloped lamb	1464	.039
Total from meat	*2125*	*.069*
Total from other ingredients	*1711*	*.011*
Total calories	*3836*	*.043*

	Number of servings	Time of preparation
Hot meat	4	.....
Cold meat	4	.....
Chartreuse of lamb	6	2 hrs.
Escalloped lamb	6	1 hr. 5 min.
Total	*20 (4 meals)*	

	Cost without fuel	Cost of fuel	Cost with fuel
Cost of roasts in forms served	$1.66	$.06	$1.72
Average cost per serving	$ .083		

RECIPES FOR LEFT-OVERS: LAMB ROAST No. 1

CHARTREUSE OF LAMB AND RICE—

1 cup rice
1 egg
2½ cups roast lamb, chopped
¼ cup cracker crumbs
¼ cup stock
Salt and pepper

Tomato Sauce
1 cup strained tomato
1 tablespoon butter
1 tablespoon flour
Salt and pepper

Steam rice, and use if for lining a greased melon mold.

Mix together the chopped meat, cracker crumbs, egg slightly beaten, stock and seasonings. Place this in mold, and cover with a layer of the steamed rice. Cover with buttered paper to keep out moisture while steaming, and steam for forty-five minutes. Serve with tomato sauce.

Cost.....$.554 Calories...1606 Number of servings.....6

ESCALLOPED LAMB—

3½ cups roast lamb, cut into small pieces
1 cup macaroni
½ cup crumbs
1 tablespoon butter
1 tablespoon flour
1 cup milk
Salt and pepper

Cook macaroni until soft in two quarts boiling salted water. Make a white sauce of the butter, flour, and milk, and season it with salt and pepper. Fill a greased baking dish with alternate layers of boiled macaroni, lamb, and crumbs. Pour white sauce over the last layer of meat, sprinkle with crumbs, and bake until crumbs are brown.

Cost.....$.578 Calories...1464 Number of servings.....6

SUMMARY OF LAMB ROAST No. 2

Ways of serving	Amount of meat used gms.	Cost of meat	Cost of other ingredients	Total cost of dish	Per cent of cost spent for: Meat	Per cent of cost spent for: Other ingredients
Hot roast	226	$.271	....	$.271	100	....
Cold meat	146	.175	....	.175	100	....
Salad	277.5	.333	$ .255	.588	56.6	43.4
Rechauffé	277.5	.333	.17	.503	66.2	33.8
Mock chops with risotto	310.6	.373	.277	.65	57.4	42.6
Total	*1237.6*	*$1.485*	*$.702*	*2.187*	*68*	*32*

	Calories: Number	Calories: Cost per 100
Hot roast	429	$.063
Cold meat	277	.063
Salad	1981	.029
Rechauffé	1757	.028
Mock chops with risotto	2051	.031
Total from meat	*2350*	*.063*
Total from other ingredients	*4145*	*.01*
Total calories	*6495*	*.035*

	Number of servings	Time of preparation
Hot roast	4	....
Cold meat	4	....
Salad	6	40 min.
Rechauffé	4	1 hr.
Mock chops with risotto	5	1 hr. 40 min.
Total	*23*	

	Cost without fuel	Cost of fuel	Cost with fuel
Costs of roasts in forms served	$2.187	$.07	$2.257
Average cost per serving	.095		

RECIPES FOR LEFT-OVERS: LAMB ROAST No. 3

LAMB SALAD—

1½ cups cold roast lamb, cut into cubes
½ cup peas
1 cup celery, cut into small pieces
¾ cups mayonnaise dressing
⅔ head of lettuce

Chill mixture of lamb, peas, and celery. Mix with mayonnaise, and serve on lettuce.

Cost.....$.588 Calories.....1981 Number of servings.....6

LAMB RECHAUFFÉ—

1½ cups lamb, cut in small pieces	⅓ cup grated cheese
1½ cups macaroni	3 tablespoons butter
2 cups canned tomato	4 tablespoons flour

Cook macaroni until tender, in boiling salted water. Drain.

Melt butter, add flour and stir until well blended. Add tomato, and cook until thickened. Place the macaroni around the edge of a shallow baking dish, forming a border. In the center of the dish place alternate layers of tomato and meat. Sprinkle with cheese and brown in oven.

Cost.....$.503 Calories.....1757 Number of servings....4

MOCK LAMB CHOPS WITH RISOTTO—

2½ cups cold lamb, finely chopped	⅛ teaspoon pepper
2 eggs	½ cup rice
1 cup stock	1 can tomato soup
4 tablespoons butter	⅓ cup grated cheese
⅜ cup flour	½ cup crumbs, fine and white
1 teaspoon lemon juice	Crisco for deep fat frying
½ teaspoon salt	

Melt butter, add flour, and stir until well blended. Add stock, and cook until the mixture thickens, add lemon juice, salt and pepper, and meat. Spread on a platter to cool. When cold form into shape of chops, dip into crumbs, egg and crumbs, and fry in deep fat. Drain on unglazed paper.

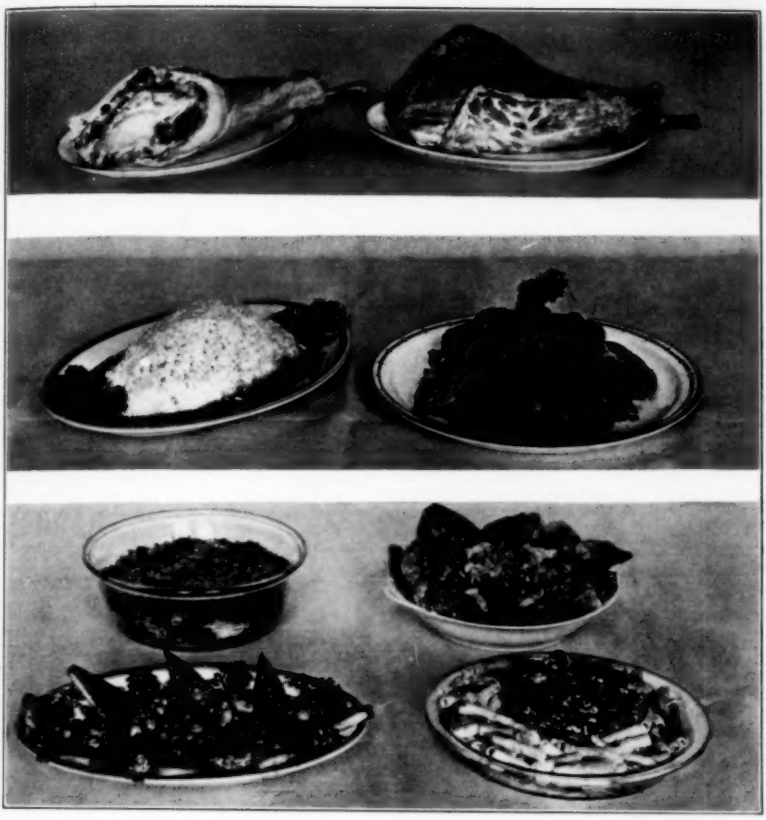
Cook rice in one and one-half quarts of boiling salted water. Drain, add tomato soup, and place in a mound in the center of a platter. Sprinkle with cheese. Arrange the mock chops around the mound of rice. Garnish with parsley.

Cost.....$.65 Calories.....2051 Number of servings.....5

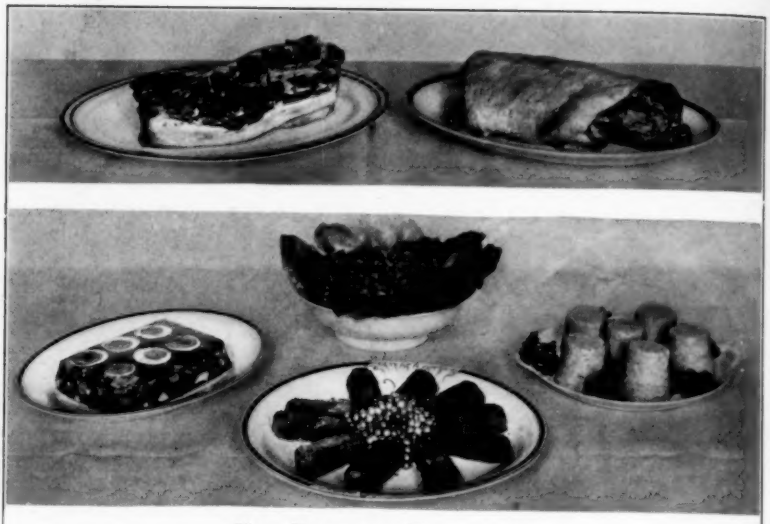
PORK ROASTS NO. 1 AND NO. 2

Although the lamb furnished meat at the lowest cost per pound, yet the pork roasts as served gave the lowest cost per serving. Moreover, the cost per hundred calories was less than that of the lamb, though not so low as that of the beef; and the cost per serving for pork roast No. 1 was less than half that for veal roast No. 1. Then, too, the pork left-overs were of the most inexpensive type—scrapple, pork turnovers, and meat potato pie. Although the added ingredients were cheap, yet the dishes were attractive for their kind. Pork left-overs have a legitimate place in a dietary. A pork turnover is very acceptable on a cold day, after vigorous exercise, and in many places scrapple would be even more popular than jellied veal.

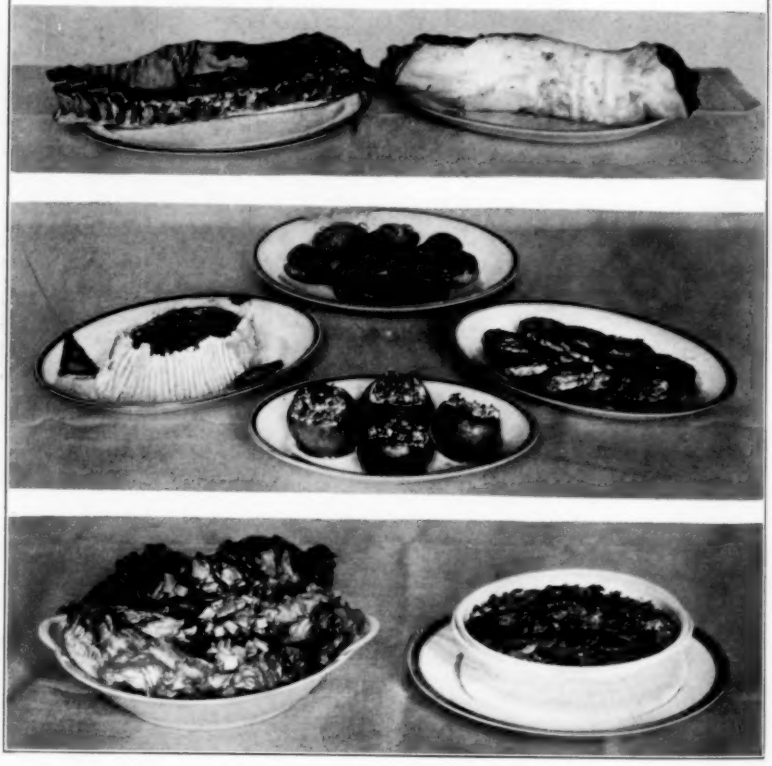
The left-overs from pork roast No. 2 were not so plain as those from No. 1, and were not so cheap. Thus the pork apples



LAMB ROASTS AND 'LEFT-OVERS'



VEAL ROASTS AND 'LEFT-OVERS'



PORK ROASTS AND 'LEFT-OVERS'

were a variation from the commonly served roast pork and apple sauce, and the pork savory with its high-mounded potato border was attractive enough to tempt even a jaded appetite. The cost, however, of the added ingredients was greater than for those used in roast No. 1, being 19 per cent of the total cost of the dishes. In the case of the salad, the added ingredients cost 42 per cent of the total, for the salad had a garnish of cool green lettuce leaves, and these had to be paid for.

SUMMARY OF PORK ROAST No. 1

Ways of serving	Amount of meat used gms.	Cost of meat	Cost of other ingredients	Total cost of dish	Per cent of cost spent for: Meat	Per cent of cost spent for: Other ingredients
Hot roast	232	$ .325	....	$ .325	100	....
Cold meat	270	.378	....	.378	100	....
Meat potato pie	136	.19	$.084	.274	69.3	30.7
Scrapple	136	.19	.02	.21	90.5	9.5
Pork turnover	165	.23	.104	.334	68.8	31.2
Total	*939*	*1.313*	*.208*	*1.521*	*86.3*	*13.7*

	Calories: Number	Calories: Cost per 100
Hot roast	603	$.054
Cold meat	702	.054
Meat potato pie	928	.029
Scrapple	992	.021
Pork turnover	1633	.02
Total from meat	*2442*	*.054*
Total from other ingredients	*2416*	*.0086*
Total calories	*4858*	*.031*

	Number of servings	Time of preparation
Hot roast	4	....
Cold meat	4	....
Meat potato pie	4	60 min.
Scrapple	4	34 min.
Pork turnover	8	40 min.
Total	*24*	

	Cost without fuel	Cost of fuel	Cost with fuel
Cost of roasts in forms served	$1.521	$.083	$1.604
Average cost per serving	.054		

RECIPES FOR LEFT-OVERS: PORK ROAST No. 1

PORK TURNOVERS—

1¼ cups chopped pork
1 tablespoon butter
2 tablespoons flour
½ cup milk

Crust

½ teaspoon salt
1½ cups flour
3 tablespoons butter
3 tablespoons butter
2 teaspoons baking powder
½ cup milk

Melt butter, add flour, and stir until blended, add milk and cook until thickened. Add pork, and season with salt and pepper.

For the crust, sift together the salt, flour, and baking powder, rub in the butter, and add the milk, making a dough which can be rolled rather thin. Cut into circles the size of an ordinary saucer. Put meat on one side of circle and fold over the other side, pressing the edges of the dough closely together. Bake in a very hot oven for about fifty minutes.

Cost.....$.334 Calories...1633 Number of servings...8 turnovers

SCRAPPLE—

1 cup pork, cut into small pieces
1 cup corn meal
3½ cups water, boiling
1 teaspoon salt
1 tablespoon Crisco

Pour corn meal slowly into boiling, salted water. Cook for three hours. Add pork, and put into greased baking powder cans. The next day remove from can, slice thinly, dip in flour, and sauté with the Crisco.

Cost.....$.21 Calories.....992 Number of servings.....4

MEAT POTATO PIE—

1 cup chopped roast pork
1 cup mashed potato
2 tablespoons milk
2 tablespoons butter
⅓ cup bread crumbs
1 teaspoon fat
1 teaspoon flour
¼ cup stock
2 tablespoons Chili sauce

Melt fat, add one teaspoon flour, and stir until blended; add stock and cook until thickened. Add Chili sauce and pork. To the mashed potatoes add milk and butter. Place the pork mixture in a baking dish, cover with mashed potato, and sprinkle with bread crumbs. Bake ten minutes in a moderate oven.

Cost.....$2.74 Calories.....928 Number of servings.....4

SUMMARY OF PORK ROAST No. 2

Ways of serving	Amount of meat used gms.	Cost of meat	Cost of other ingredients	Total cost of dish	Per cent of cost spent for: Meat	Per cent of cost spent for: Other ingredients
Hot roast	315	$ .406	....	$ .406	100	....
Cold meat	170	.217	....	.217	100	....
Pork apples	166.8	.215	$.11	.325	66	34
Pork savory	219.5	.283	.066	.349	81	19
Pork salad	135	.174	.13	.304	58	42
Total	*1006.3*	*1.295*	*.306*	*1.601*	*80.9*	*19.11*

	Calories Number	Cost per 100
Hot roast	819	$.049
Cold meat	442	.049
Pork apples	834	.039
Pork savory	1190	.029
Pork salad	525	.058
Total for meat	*2617*	*.049*
Total for other ingredients	*1193*	*.025*
Total calories	*3810*	*.042*

	Number of servings	Time of preparation
Hot roast	4	....
Cold meat	4	....
Pork apples	4	52 min.
Pork savory	6	1 hr. 7 min.
Pork salad	4	30 min.
Total	*22 (5 meals)*	

	Cost without fuel	Cost of fuel	Cost with fuel
Cost of roast in forms served	$1.601	$.068	$1.669
Cost per serving	.073		

RECIPES FOR LEFT-OVERS: PORK No. 2

PORK APPLES—

1½ cups cold chopped pork
4 medium sized apples
1 tablespoon butter
½ teaspoon salt
⅛ teaspoon pepper

Core apples and scoop out centers. Fill centers with chopped pork and a small amount of chopped apple, seasoned with salt and pepper. On top of each apple place a small piece of butter. Bake for thirty minutes in a moderate oven, basting from time to time.

Cost.....$.11 Calories.....834 Number of servings.....4

PORK SAVORY—

2 cups chopped pork
2 tomatoes
½ bay leaf
Cayenne
½ cup stock
5 medium sized potatoes
¼ cup milk
½ teaspoon salt

Cook together the stock, bay leaf, and tomatoes. Add chopped pork. Pare potatoes, boil, mash, and add hot milk and salt. Reheat, put on a platter as mounded border, filling the center with the pork mixture.

Cost.....$.066 Calories.....1190 Number of servings....6

PORK SALAD—

1¼ cup diced pork	⅓ cup boiled dressing
½ bunch celery	⅔ head lettuce
⅛ cup vinegar	

Mix together the pork, celery, and vinegar, and chill. Add boiled dressing. Serve with a garnish of lettuce.

Cost.....$.13 *Calories*.....525 *Number of servings*.....4

CONCLUSION

The busy housekeeper may now fairly ask: What is the chief practical conclusion to be drawn from this discussion of roasts? In a large part, the answer is this: With the present high prices and the need for economy the most practical way for the housewife to reduce her household expenses is to conserve what she has. As a mere individual she cannot do much toward lowering food prices, but she can see to it that whatever she buys is fully utilized and that nothing is wasted. Particularly is this true of roasts which because of methods of serving now in vogue can be used to the last fragment, while on the other hand that part of the meat of a chop which is left on the bone cannot be utilized, having already been served on the dinner plate. Roasts consequently cost less per serving and less per pound of edible portion than chops. It is also worth noting that although the cost per pound of the edible portion of roast beef is about the same as that of porterhouse steak, yet the roast again really costs less per serving because of the possibility of left-overs.

However, if the housewife gives the roast a place on the menu she must also accept the responsibility of the left-over. Just as with the beef discussed in the previous article, so the meat remaining for left-overs from these veal, lamb, and pork roasts is a far larger percentage of the original roasts than the meat which is served hot. But why shouldn't these left-over dishes be a joy instead of an irksome responsibility? One hears much of the joy of the creative impulse, and surely left-overs furnish the ingenious cook a wonderful field for both originality and imagination, for a left-over can be almost anything except a dessert; it could even be a suet pudding.

In this experiment, twenty-five attractive dishes were prepared, no two alike. The added ingredients were of all kinds, and their per cent of the total cost of the dish ranged from 9.5

per cent in the scrapple to 49 per cent in the veal mousse. However, the theory that the housewife can spend so much extra on added ingredients that she would be justified in throwing away small amounts of left-over meat is not tenable, for even in the most expensive left-over dishes the cost of the added materials was less per hundred calories than the cost of the meat.

It is also quite true that the preparation of these left-overs consumed time, and it is only fair that this time-factor should be reckoned in the total cost. Thirteen of the dishes required an hour or less, and twelve required longer. But the efficiency expert has said that after all the reduction of the time for housework lies not so much in the reduction of time for *separate* processes as it does in the making of every moment count for something, and particularly by the 'dove-tailing' of processes. Thus, although the time given in the tables indicates the number of minutes necessary for cooking, yet this same period could be made to include the time needed to prepare other dishes, to set the table, or to clear up the kitchen. Managed thus, a two-hour left-over may not be so formidable for the busy woman as it at first sounds for, by a little judicious efficiency 'engineering', the clever cook may quite literally keep several pots boiling at once and that, too, without the danger of burning any one of them.

WASTE IN ARITHMETIC

By SARA E. CHASE

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The following article was originally part of a longer report on the subject of Waste in Arithmetic, which considered, in addition to the two topics here discussed, the questions of the failure to make arithmetic more concrete, and changes in method. In preparing this report the writer conducted classes in eleven different school rooms in the states of New Jersey, Massachusetts, and New Hampshire, the grades considered ranging from the third to the ninth.

I

Waste Through the Topic Mensuration

A number of teachers have observed that many children do not really understand mensuration, and further it has been noted that all children forget this topic more quickly than any other part of the work in arithmetic. In order to obtain more definite information concerning this situation, tests were made of some ninth-grade and high school pupils to determine their ability to compute simple areas. Accordingly, each pupil was given a sheet of paper upon which were drawn five plane figures: a square, a rectangle, a rhomboid, a triangle, and a circle. The student was then given a ruler and asked to find the exact area of each figure.

A summary of the 123 papers showed that forty-four per cent could not find any one of the areas. One child found four, two found three, and all but three children less than three. Ninety-three per cent failed on the rhomboid, ninety-eight per cent on the circle, ninety-seven per cent on the triangle, fifty per cent on the rectangle, and fifty-five per cent on the square. The finding of these areas involved multiplying $2\frac{1}{2}$ by $2\frac{1}{2}$, $2\frac{1}{4}$ by $4\frac{1}{2}$,

and 2¾ by 2½, and of the 132 multiplications made, thirty-four per cent were incorrect.

This same test was given to a ninth-grade class in New Hampshire, that had just spent three months on mensuration. Of the thirty-eight children tested, one found all of the areas, twenty-four per cent found none of them, ninety-three per cent failed on the rhomboid, ninety-seven per cent on the circle, eighty-two per cent on the triangle, thirty-seven per cent on the rectangle, and thirty-two per cent on the square. Of the answers, where the right method had been used, eighteen per cent were wrong because the multiplication was wrong.

Thirty juniors in a technical high school were tested three months after they had completed mensuration in connection with plane geometry. Of these, sixteen and two-thirds per cent failed on the rhomboid, forty-three per cent on the circle, sixteen and two-thirds per cent on the triangle, three per cent on the rectangle, and seven per cent on the square.

Even where the right method had been used, twenty-one per cent of the work was wrong because the multiplication was incorrect.

For the sake of comparison this same test was given to fifteen adult students at Teachers College. These persons were all experienced teachers, holding positions as principals, superintendents, or normal school supervisors. Only one found all of the areas correctly, and only two found the area of the circle. One gave the area of the rectangle, which was 4½ inches long and 2⅛ inches wide, as over eighty square inches. Another said the circle, whose diameter was 2½ inches, had an area of forty-two square inches. Moreover, not one of the fifteen followed this method of expressing the work: 4 square inches x 4 = 16 square inches. All said, "4 x 4 = 16 square inches."

As an additional test the children were also given a paper on which was a list of areas and volumes. They were then asked to read the list and to draw a line through any that they had not used outside of school, and to write beside the others the purpose for which they had used them. The list was as follows:

1. Area of a square, rectangle, triangle, circle, rhomboid.
2. Entire surface of a cube, prism, pyramid, cylinder.
3. Volume of a cube, prism, cylinder.

Seventy-eight per cent crossed off everything; and in most cases the "purposes" written down called for dimensions but not areas.

Inquiry was next made among a number of teachers of drawing, sewing, cooking, and manual training to determine just what areas or volumes the children really needed to make use of in the practice of these subjects. The teachers of manual training replied that in their subject use was made of board measure to compute the cost of lumber, but that no other area was needed aside from that. The other teachers answered that in their particular fields there were no areas or volumes that the children must determine.

A group of men and women engaged in various occupations were also asked to fill out a slip of paper containing a list of areas and volumes similar to the list mentioned above and with the addition of a question regarding the use made of square root. These persons were asked to "Please draw a line through any of the following measurements that you have not used since you left school." Answers were received from seventy men and seventy women, 140 in all. Ten different states were included; forty occupations were represented by the men and fourteen by the women. Sixty-eight per cent of the women and thirty per cent of the men crossed off everything.

The rectangle and the square were the only areas that had been used by fifty per cent of the men; and only two others, the triangle and square root, had been used by forty per cent. The rectangle and the square were the only figures that had been used by twenty-five per cent of the women, while only two others, the circle and square root, had been used by as many as ten per cent.

Following is a table which shows in each case the percentage of the seventy men and the seventy women who had made use of the measurement in question since leaving school.

	Men	*Women*
1. Area of a		
1. Square	66⅔%	27%
2. Rectangle	61	26
3. Triangle	42	8
4. Circle	32	12
5. Rhomboid	11	3

	Men	*Women*
2. Entire surface of a		
1. Cube	38	8
2. Prism	20	5
3. Pyramid	9	
4. Cylinder	24	5
3. Volume of a		
1. Cube	39	9
2. Prism	18	8
3. Cylinder	36	6
4. Square root of a number	41	12

A book on arithmetic teaching, recently published, says, "The purpose of mensuration in the elementary schools, as emphasized by the most distinguished mathematicians, is to give insight into higher mathematical relations." This book further states, "Mensuration is to assist pupils to interpret rationally the universe about them." Other authors speak of the great practical value of the subject.

In the light of the above experiments and the results reached, one may be pardoned if one questions these observations somewhat, and wonders if these children really had gained anything from mensuration that would give them an insight into higher mathematical relations. Further an examination of attendance statistics tells us that only a very small proportion of elementary school children ever reach the higher mathematics. It has also been shown in this paper that a selected group of 140 men and women did not find any great practical value in their study of school arithmetic. In the light of all this, it is stating the conclusion somewhat mildly to say that if nothing more can be offered than the usual reasons for the teaching of mensuration in the grades, then the amount of time commonly devoted to this topic is hardly justified. Since their multiplication of very simple mixed numbers gave these pupils a poor foundation indeed for higher mathematics; since their confusion in regard to perimeter, dimensions, area, and square inches made any assistance thus gained toward a rational interpretation of the universe doubtful; and since the majority could not make any practical use of the subject, the conclusion seems obvious that not one of the suggested purposes had been accomplished by the forty weeks' work.

II

Waste Through Text-Book Problems

The text-books on arithmetic use many words that the children do not meet in any other subject and which consequently may not be understood by them. To determine what certain of these words really mean to some third-, fourth-, and fifth-grade children lists of words, common to three or four of the newer text-books for these grades, were arranged after the manner of the Thorndike Vocabulary Test. The list used for the fourth and fifth grades, together with the accompanying directions for the test, follows:

Name..... Grade.....

1. Put *w* beside each word that tells what a man's work is.
2. Put *m* beside each word about money.
3. Put *l* beside each word that might be used about land.
4. Put *i* beside each word that is the name of something to put things in.

basin	area	merchant	profit
salary	carpenter	cashier	pasture
retail	field	building lot	earn
mason	bin	attend	collect
basket	real estate	teamster	tank
lot	poultry	jars	acre
bucket	fares	debts	income
rent	dealer	gardener	insurance
machinist	tailor	expenses	miller
coins	barrel	nickel	cistern
broker	wages	owe	customer
excavate	commission	schedule	

A practice list was first given to be sure that the directions were understood. The results of the test are shown in the following table, the columns of per cents indicating the proportion of the class which failed to mark the words correctly.

	Grade *IV*	*V*		*Grade* *IV*	*V*
basin	26%	20%	merchant	45%	24%
salary	40	20	cashier	52	20
retail	30	16	building lot	65	32
mason	78	36	attend	4	4
basket	13	8	teamster	88	40
lot	9	12	jars	40	16
bucket	30	16	debts	91	32
rent	56	28	gardener	17	8
machinist	35	28	expenses	65	20
coins	26	16	nickel	13	16
broker	56	45	owe	91	60
excavate	4	4	schedule	17	4
area	91	36	profit	78	45
carpenter	26	8	pasture	52	32
field	9	8	earn	60	36
bin	43	20	collect	17	8
real estate	100	68	tank	65	36
poultry	40	36	acre	56	32
fares	65	60	income	96	41
dealer	35	28	insurance	91	42
tailor	13	4	miller	26	12
barrel	30	32	cistern	100	88
wages	70	28	customer	35	44
commission	100	68			

The pupils of the third grade were then given lists containing the following eleven words taken from third-grade text-books: *orchard, farmer, containing, bin, dealer, grocer, attended, merchant, acre, distance, gardener.*

They were asked to mark the words that told of a man's work. Forty-five per cent failed to mark *grocer* and *merchant*, thirty per cent *dealer*, fifteen per cent *gardener*, and ten per cent *farmer*. On the other hand, thirty-five per cent marked *orchard*, twenty per cent *attended*, and fifteen per cent each of the other words.

Since perhaps a number of the children in each of the grades had some of the words right without really understanding their meaning, and since on the other hand some of the children may have had words wrong that they otherwise would have understood in sentences, a further test was made as follows:

Each of the third-grade children was given a list containing the following words: *the farmer, the dealer, the grocer, the merchant,*

the gardener. Each of the fourth and fifth-grade children was also given this list and in addition the following: *the carpenter, the mason, the miller, the cashier, the contractor, the broker, the tailor, the banker.* The pupils were then asked to write complete sentences describing the work of each man. That many of the children in each grade seemed to have no very clear notion of just what this work was, is indicated by the following table in which is given the percentage for each grade of those whose answers were not satisfactory.

	Grade III	*Grade IV*	*Grade V*
1. The farmer			
2. The dealer	80	40	24
3. The grocer	40	20	20
4. The merchant	90	60	
5. The gardener	40	20	
6. The carpenter		50	4
7. The mason		80	40
8. The miller		50	15
9. The cashier		60	24
10. The contractor		95	80
11. The broker		95	65
12. The tailor		30	
13. The banker		25	20

Among the more or less illuminating answers were these:

The carpenter carpets floors.
The dealer does dealering.
The contractor contracts.
The broker breaks rocks.
The broker tries to get all of the money.
The broker gets broke.
The merchant does no hard work.
The banker takes the money with him.

The grocer was usually "the man who delivers the groceries," the tailor "one who cleans clothes," and the banker any man "in a bank."

All of the text-books use words about farms and stores that children may not know and accordingly their knowledge of some of these words was further tested. They were asked to imagine that they were all making a visit to a farm. This seemed to please the children although one-half of them said they had never been

on a real farm. The imaginary trip began as follows: "Now we are at the door of the farmhouse. We ask the farmer if we may see his cows and horses. He invites us to go to the barn. As we cross the yard he points to some poultry he wishes us to notice." Then the pupils were asked what they saw when the word *poultry* was spoken. The third and fourth grades whispered the answers, and the fifth grade wrote theirs down. The imaginary trip was then continued until it had brought in the words: *bin, flock, head of cattle, pasture, orchard, loading grain, acres, produces thirty bushels of wheat, shipping oats, dairy,* and *crops.*

After the children had completed their "tour" of the farm, a second similar excursion was made, this time to a store. It was then noticed that although the terms used in store-keeping were understood by the majority of the pupils, the vocabulary of the farm was not at all clear. This is shown in the following table in which are given the per cents for each grade of those who failed to understand the accompanying list of words:

	Grade III	*Grade IV*	*Grade V*
poultry	80	60	20
bin	100	75	25
flock	20	10	
head of cattle	100	80	25
orchard	40	30	15
loading grain	80	50	50
acres	50	30	
crops	80		
dairy	20		15
produces thirty bushels		75	50
pasture	20		
ships oats		80	50

The children were next asked to draw the following figures and the per cents given show failures to do so.

	Grade III	*Grade IV*	*Grade V*
Circle			
Square	10	4	8
Rectangle	100	39	80
Triangle	50	35	20
Oblong	15	40	4
Rectangular plot		87	68

Their knowledge of the words *attending*, *estimate*, *increase*, *decrease*, and *width* was also tested. They were asked to close their eyes and raise their hands if they were "attending school." Not one in the third grade was "attending;" forty per cent of those in the fourth, and eight per cent in the fifth did not know that they were so doing. When asked to place their hands in a given position, and to *increase* the distance between them, 100 per cent of the third grade, ninety per cent of the fourth, and eighty per cent of the fifth failed to do so. *Estimate* was unknown to all of the third, sixty per cent of the fourth and twenty per cent of the fifth grade. *Width* was not understood by ninety per cent of the third grade, sixty per cent of the fourth, and twenty per cent of the fifth.

Surely these children should not be asked to consider problems depending for their meaning on any of these words; and if these words were not understood, it is only reasonable to believe many other similar words in the text-books were equally obscure.

Nor is the difficulty which these children found peculiar to them alone. Inquiries were addressed to fifty teachers with the result that forty-five answered that they had found the vocabularies of the text-books too difficult to be understood by their pupils. The questions asked these teachers, together with a sampling of typical answers, follow:

1. *In your teaching of arithmetic have you found much or little material in the text-books that you could use?*

"Little." "Very little." "Little in any one particular book; had to go to a number to get material to illustrate a principle."

2. *If little how was the material unsatisfactory?*

"Did not fit children. Conditions not real. Numbers too large." "Too difficult as regards arithmetical work. Too complicated in reasoning. Too far removed from life." "Too difficult as to numbers and reasoning. Not real to the child." "Too difficult problems. No relation to the child's life." "Problems not true to life. Too deep reasoning."

3. *Have you found the vocabulary of the text-books too difficult for the children?*

The answer was almost always "Yes."

4. *Do you remember any words that you have had to explain to them recently?*

"Real estate, rectangular plot." "Gross receipts. Sold so that $50 was *cleared.*" "Consecutive, complement, supplement." "Computations, gross profit, net, revolutions." "Net proceeds." "No, for I almost never use a text-book. I select what few problems I can find and put them in such language as the pupils can understand. The rest of my problems I make myself."

5. *Have you ever found that part of a child's difficulty with a process could be traced to the lack of a uniform method of teaching that process?*

"Yes; addition of fractions, division of decimals, interest." "Yes, *percentage;* impossible to get work done in eighth grade because of variety of methods." "Yes, much of it." "Yes; all work in fractions, percentage and its applications." "Yes, especially percentage." "*Yes*—again and again I find it true."

Sometimes the subject matter of whole pages may be foreign to the child's experience. For instance, one of the first pages of a fourth-grade book deals with "the average income of physicians," "the salary of the President," "the salary of the governor of Illinois," "the police force of New York City," "the greatest depth of the Pacific Ocean," and the distance of the moon and the sun from the earth. Another page in a fifth-grade book includes "registered votes," "apple blossoms that did not develop," "a poultry raiser," "farmers' crops," "unseasoned lumber," "sugar beets," "beef tallow," "experimental farming," and "a dealer's profits."

In addition, some of the problems, even though they may be about things or situations that are familiar to children, are yet stated in words that children do not use and consequently may not understand. Thus one book, in asking questions about a child's garden, uses all of these phrases on one page: "rectangular plot," "grow on shares," "cultivate part of an acre," "possible to average a crop," "most scientific way," "results of more nearly perfect conditions," and "seventh-eights of that figure."

Moreover, many of the text-book problems are founded on the answer and are consequently worked backward from that answer.

"In my library there are 164 books on history and these are two-seventeenths of my library. How many books have I?" Other problems would never be solved by the method which is required by the book as an application of some principle. "If a horse, tied by a rope, can graze over 1,570.8 square feet, how long is the rope?"

It seems reasonable from all this to conclude that text-book problems may be a source of real waste in the teaching of arithmetic. To summarize: the investigation here recorded has shown, after a careful study of numerous text-books, that many problems involve conditions that are quite untrue to life; that many of the words used were unfamiliar or even quite unknown to the one hundred children tested; and finally that forty-five experienced teachers from various school systems have found the subject matter and the vocabularies of the various texts which they have used quite unsuited to the capacities of their pupils.

Surely, if we really do not believe in transfer of training, we are not going to ask children to solve those problems whose conditions are not true to life; for if we give them such problems containing unfamiliar situations or words we are going to prevent the very thing for which we are working—clear habits of thinking by which to increase their power to make intelligent use of numbers.

INDIVIDUAL TESTING WITH COMPLETION TEST EXERCISES

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For most purposes it is necessary in order to test an individual adequately with Trabue's completion exercises[1] to give a more extensive test than is comprised in a single one of Trabue's scales. Eight, and ten-sentence scales are entirely satisfactory for the determination of class scores. Whether the scale is short or long it is necessary that the exercises in it shall have specific difficulty values in order that grading may be upon the scale basis. The two following exercises, Alpha and Beta, are equal in difficulty to each other, are sufficiently extensive to yield a quite accurate individual score, and may be readily graded as will be explained.

COMPLETION EXERCISE ALPHA

Name.....

Age..... Grade.....

Write words in the empty spaces to make the whole sentence sound sensible and right.

0. We like good boys.....girls.

110 1. I like to go to.....

84 2. The sky.....blue.

91 3. Ice is cold, but fire is.....

81 4. The stars and the .....will shine tonight.

88 5. The .....plays.....her dolls all day.

84 6. Good boys.....kind.....their sisters.

7. During the.....weather the boys play in the shade.

103 8. Boys must.....be rude to .....mothers.

98 9. The boy will.....his hand if.....plays with fire.

81 10. Time.....often more valuable.....money.

88 11. Hard.....makes.....tired.

84 12. The.....rises.....the morning and.....at night.

[1] M. R. Trabue, Completion-Test Language Scales, Columbia University, Contributions to Education, No. 77, 1916.

98 13. Hot weather comes in the.....and.....weather..... the winter.

92 14. The child..... .....the river..... was drowned.

82 15. She.....if she will.

89 16. It is good to hear.....voice..... .....friend.

85 17. The boy who.....hard.....do well.

106 18. Boys who play..... .....mud get their hands.....

115 19. .....the weather is.....one should wear heavier..... than when it is.....

92 20. It is a.....task to be kind to every beggar..... ..... for money.

89 21. The happiest and.....contented man is the one.....lives a busy and useful.....

100 22. In.....to maintain.....health, one should have nourishing.....

102 23. Many people.....their health because.....do not..... the.....of hygiene.

107 24. A home is.....merely a place.....one.....live comfortably.

95 25. It is very.....to become.....acquainted..... persons who.....timid.

101 26. One's.....do.....always express his thoughts.

111 27. The.....is always shining.....storm-clouds sometimes .....it.....us.

108 28. Children should.....that after all nobody is.....to care much more.....their success than..... ..... parents.

108 29. .....are times in the.....of almost.....of us when we.....for a long life.

100 30. One's real.....appears.....often in his..... than in his speech.

96 31. Extremely old.....sometimes.....almost as..... care as.....

101 32. To..... to wait, after having.....to go....., ...very annoying.

103 33. The.....seems.....and dreary.....a discouraged.....

86 34. The knowledge of..... .....use fire is..... of .....important things known by.....but unknown .....animals.

112 35. ....want are often caused by.....

93 36. In order..... .....clearly at.....it is..... to.....artificial.....

96 37. One's.....in life.....upon so..... factors .....it is not.....to state any single.....for .....failure.

90 38. .....a rule one.....association.....friends.
101 39. One can.....do his.....at one.....while..... of another.
97 40. The future.....of the stars and the facts of..... history are.....now once for all,.....I like them..... not.

COMPLETION EXERCISE BETA

Name.....

Age..... Grade.....

Write words in the empty spaces to make the whole sentence sound sensible and right.

0. We are going.....school.
91 1. I see you. Can you see.....?
110 2. The boy has.....book.
88 3. I.....to school each day.
84 4. Men.....older than boys.
105 5. I see.....man and the boy.
106 6. The wind.....the dust into our eyes.
105 7. Here is a man who.....do it.
106 8. The little.....and his dog.....running a race.
96 9. Boys and.....soon become.....and women.
88 10. The rude child does not.....many friends.
91 11. Children should.....many lessons from.....parents.
96 12. The.....are often more contented.....the rich.
113 13. A.....drink is very refreshing to a.....who is.....
112 14. Children.....to pick.....
114 15. Brothers.....sisters should always.....to help..... other.
100 16. Children.....are rude.....not easily win friends.
102 17. One can not foretell.....will happen in the.....
96 18. The rose is a favorite.....because of.....fragrance and .....
98 19. The poor little.....has.....nothing to.....; he is hungry.
110 20. It is hard.....keep.....getting.....on a rainy day.
110 21. .....and rain.....plants.....
85 22. Men.....more.....to do heavy work.....women.
111 23. When one.....angry he should.....forth an effort ....his actions.
110 24. The.....of your.....and mother is your brother.
92 25. Worry.....never improved a situation but has..... made conditions.....

89 26. The best advice.....usually.....obtained..... one's parents.

109 27. Sleep.....both.....and body.

88 28. The sun is so.....that one can not..... ....directly.....causing great discomfort to the eyes.

103 29. To.....many things.....ever finishing any of them .....a.....habit.

109 30. When two persons.....about.....which neither understands, they.....almost.....to disagree.

99 31. One.....not, as a....., ...attention..... uninteresting things.

90 32. .....things are.....satisfying to an ordinary..... than congenial friends.

33. Doesn't it.....strange that.....people should show so much.....and.....so.....excitement when a sudden loud .....is heard?

101 34. It is sometimes.....to.....between two..... of action.

104 35. .....that are.....to one by an.....friend should be pardoned.....readily than injuries done by one..... is not angry.

83 36. To.....friends is always.....the.....it takes.

99 37. To eat.....one is.....is a.....pleasure.

104 38. It is.....that a full-grown man should.....ghost..... he is.....

39. One ought to.....great care to.....the right..... of....., for one who.....bad habits.....it .....to get away from them.

111 40. The least difficult.....are by no.....always the most ....., ...are the.....tasks.....the most disagreeable.

In giving either of these two tests, the first sentence is to be used for illustrative purposes. The scoring of each sentence is to follow the directions laid down by Trabue, and to facilitate this the number of the page of his book upon which the key for the sentence is found is given in small type in the margin. It will be noticed that no page number is given for sentence 7, Exercise Alpha, or for sentence 33, Exercise Beta. These sentences are of the difficulties which are needed for the places in the tests which they occupy, but as there were no Trabue exercises having these particular difficulty values they have been chosen from the

writer's own material. These two exercises, with others, were scaled in terms of the difficulty values of Trabue's sentences by giving them, along with a number of his exercises, to about 700 Austin, Texas, public school children. The key for their scoring follows:

During the.....weather the boys play in the shade.

Score 2
hot, warm, sunny
Score 1
bright, cloudy, pleasant
Score 0
wet, rainy

Doesn't it.....strange that.....people should show so much .....and.....so.....excitement when a sudden loud .....is heard?

Score 2
seem*..... some**..... excitement, fear, nervousness***..... others, some****..... little*****..... noise, sound, racket, disturbance ******
Score 1
appear..... ** worry,***..... again,****.....***** .... ****** *..... worry,***..... again,****..... *****..... ******
Score 0
*..... **..... sorrow..... ****..... ***** ..... ******

Sentences 1–5 have an average Trabue scale difficulty of 2.00, sentences 6–10 of 4.00, sentences 11–15 of 6.00, sentences 16–20 of 7.00, sentences 21–25 of 8.00, sentences 26–30 of 9.00, sentences 31–35 of 10.00, and sentences 36–40 of 11.00—all to close approximations. The exact values for Exercise Alpha are: 2.07, 3.99, 6.00, 7.00, 8.03, 9.02, 9.93, 11.11; and for Exercise Beta: 2.06, 4.01, 6.02, 7.00, 8.03, 9.01, 9.93, 11.09.

The calculation of an individual score follows the lines explained by the writer in another article,[1] and here given for a second time only in so far as the technique and not the theory of the procedure is concerned. Suffice to say that the score obtained is that scale value at which the individual may be expected to earn one-half of the perfect score.

Consider the case of an individual who makes a perfect score on sentences 1–20, gets a score of 8 out of 10 on the next five

[1] Truman L. Kelley, A simplified method of using scaled data for purposes of testing, *School and Society*, Vol. 4, No. 79–80, July 1–8, 1916.

sentences, a score of 5 on the next five, of 2 on the next five, and of 0 on the last five. Such an individual gets half and misses half of sentences 26–30, the average difficulty of which sentences is 9.00; accordingly the individual's score is 9.00. The same result is obtained if the falling off in the scores for the successive difficulties is considered as follows:

I	II	III	IV	V	VI
Sentences	Average difficulties	Scores made	Falling off in scores	Decreases corresponding to average difficulties	Products of Columns IV and V
1–5	2	10	0	3	0
6–10	4	10	0	5	0
11–15	6	10	0	6½	0
16–20	7	10	2	7½	15.
21–25	8	8	3	8½	25.5
26–30	9	5	3	9½	28.5
31–35	10	2	2	10½	21.
36–40	11	0	0	11½	0
			10		)90.0(9.00

As shown, the difficulties in column V are taken as many times as is indicated in column IV and averaged, resulting, for the record given, in the Trabue scale score of 9.00. In using this method it is necessary that the easiest difficulty considered should have a score of 10 and the highest difficulty a score of 0. As very little children do not make a score of 10 on difficulty 2, and advanced ones do not make a score of 0 on difficulty 11, scores will sometimes have to be estimated for difficulties 0, 1, 12, 13, etc. Estimates may be made according to the following tables:

If score on Difficulty	Estimate score on Difficulty	Estimate score on Difficulty	Estimate score on Difficulty
2 is 9	1 to be 10	0 to be 10	−1 to be 10
2 is 8	1 to be 9	0 to be 10	−1 to be 10
2 is 7	1 to be 9	0 to be 10	−1 to be 10
2 is 6	1 to be 8	0 to be 10	−1 to be 10
2 is 5	1 to be 7	0 to be 9	−1 to be 10
2 is 4	1 to be 6	0 to be 8	−1 to be 10
2 is 3	1 to be 5	0 to be 7	−1 to be 10
2 is 2	1 to be 4	0 to be 6	−1 to be 10
2 is 1	1 to be 3	0 to be 5	−1 to be 10
2 is 0	1 to be 0	0 to be 5	−1 to be 10

If score on Dif.	Est. score on Dif.	Est. score on Dif.	Est. score on Dif.	Est. score on Dif.	Est. score on Dif.
11 is 0	12 to be 0	13 to be 0	14 to be 0	15 to be 0	16 to be 0
11 is 1	12 to be 0	13 to be 0	14 to be 0	15 to be 0	16 to be 0
11 is 2	12 to be 1	13 to be 0	14 to be 0	15 to be 0	16 to be 0
11 is 3	12 to be 1	13 to be 0	14 to be 0	15 to be 0	16 to be 0
11 is 4	12 to be 2	13 to be 1	14 to be 0	15 to be 0	16 to be 0
11 is 5	12 to be 3	13 to be 1	14 to be 0	15 to be 0	16 to be 0
11 is 6	12 to be 4	13 to be 2	14 to be 1	15 to be 0	16 to be 0
11 is 7	12 to be 5	13 to be 3	14 to be 1	15 to be 0	16 to be 0
11 is 8	12 to be 6	13 to be 4	14 to be 2	15 to be 1	16 to be 0
11 is 9	12 to be 7	13 to be 5	14 to be 3	15 to be 1	16 to be 0

The values in column IV of the example given are the frequencies of the measures in column V, and as it sometimes happens that an individual makes a higher score on a certain difficulty than that made on a lesser difficulty, the frequencies in column IV will sometimes be negative. The following calculation illustrates the procedure in such a case and it also illustrates the estimation of scores on difficulties below 2:

I	II	III	IV	V	VI
Sentences	Average difficulties	Scores made	Falling off in scores	Decreases corresponding to average difficulties	Products of Columns IV and V
	−1	10 (Est.)	1	−½	−.5
	0	9 (Est.)	2	½	1.0
	1	7 (Est.)	2	1½	3.0
1–5	2	5	5	3	15.0
6–10	4	0	−2	5	−10.0
11–15	6	2	2	6½	13.0
16–20	7	0	0	7½	.0
21–25	8	0	..	...	....
26–30	9	0	..	...	....
31–35	10	0	..	...	....
36–40	11	0	..	...	....
			—		———
			10		)21.5(2.15

The following illustrates the calculation in case the record is irregular and high:

I	II	III	IV	V	VI
Sentences	Average difficulties	Scores made	Falling off in scores	Decreases corresponding to average difficulties	Products of Columns IV and V
1–25	Below 9	10	0		.0
26–30	9	10	2	9½	19.0
31–35	10	8	−1	10½	−10.5
36–40	11	9	2	11½	23.0
.....	12	7 (Est.)	2	12½	25.0
.....	13	5 (Est.)	2	13½	27.0
.....	14	3 (Est.)	2	14½	29.0
.....	15	1 (Est.)	1	15½	15.5
.....	16	0 (Est.)	0	16½	.0
			10		)128.0(12.8

The score here presented is one of accuracy only. It is recommended that no time limit be placed upon the test and no addition to the score be made for early completion of it. For practical purposes a time limit must be set, but it should be such that some 95 per cent of the class will have already voluntarily stopped work. Some time limits are, for example, 20 minutes for a third grade class, and 50 minutes for a tenth grade class. There are usually a few overconscientious pupils who would work on indefinitely if absolutely no time limit were set, and probably without adding a single unit to their score.

The time limit suggested is such that the test is in no sense a speed test. Trabue's method, allowing 7 minutes for his Scales B, C, etc., makes the test in part a speed test, and it is very questionable whether this improves its diagnostic value as a measure of intelligence. A completion test of 56 sentences was given to fourth, eighth, and eleventh grade pupils in the Austin, Texas, public schools. No time limit was set, but the time when each pupil finished or when he expressed the conviction that he could do no more with the test was recorded. The data yielded the following correlations:

Between accuracy and scholastic standing	.859
Between time of writing and scholastic standing	.198
Between time of writing and accuracy	.043

It is seen that on the whole those who take the longer time stand higher scholastically, and that the time score is but very slightly diagnostic of scholastic standing, but that the accuracy score is very highly diagnostic. When the data for these grades were considered singly a slight negative correlation was found between scholastic standing and time used in filling in the sentences, but in this case the correlation, —.06, is again too small to be significant. The weightings of accuracy and time when determined by means of a regression equation become .859 and .146 respectively, and the correlation between a score based upon speed and accuracy when thus weighted, and scholastic standing is .873, but .014 higher than that between scholastic standing and accuracy alone. For these reasons the speed score is considered inconsequential. The psychological reason for this is probably to be found in the fact that with a test as difficult as this it is not evidence of high intelligence to get through the work in a short space of time, for this means that it has not been accurately done. The same test given to college graduates has shown that speed is a slightly more significant factor. In their case the longer the time spent on the test, the lower, on the whole, the scholastic standing.

Norms for Exercises Alpha and Beta as scored are not comparable to the tentative norms laid down by Trabue for his scales B, C, D, and E, on page 118 of his "Completion-Test Language Scales," but may be compared to the grade medians that he gives on page 54. These are given below:

Grade	Grade Median
II	1.7
III	3.3
IV	4.5
V	5.5
VI	6.3
VII	7.1
VIII	7.8
IX	8.3
X	9.1

Grade	Grade Median
XI	9.5
XII	9.8
College Graduates	11.2

In a personal letter, Dr. Trabue states that subsequent testing has shown these norms to be low for the early grades and slightly high for the advanced grades. This later testing gave results as follows, though Dr. Trabue stated that he did not consider them to be final:

Grade	Grade Median
IV	5.8
VI	7.1
VIII	7.8
IX	8.3
X	8.5
XI	8.8
XII	9.4

The writer secured an average score of 11.4 for 58 advanced students, mainly graduates and seniors, at the University of Washington, and secured scores as follows for pupils in three small country schools in east Texas: (These schools are in a district where malaria and hookworm infection is high, but the scores of pupils so infected have not been included.)

Grade	Grade Median
II	2.8
III	4.0
IV	6.4
V	6.7
VI	7.4
VII	7.3
VIII	7.8
IX	8.9

On the basis of these various data, the following tentative norms are proposed:

Age	Grade	Norm
7		1.1
8		1.9
	II	2.2
9		3.1
	III	3.7
10		5.0
	IV	6.0
11		6.2
	V	6.7
12		6.7
	VI	7.1
13		7.1
14		7.3
	VII	7.4
15		7.6
	VIII	7.8
16		8.2
	IX	8.5
17		8.7
	X	8.9
18		9.0
	XI	9.3
	XII	9.5
University Seniors and Graduates....		11.4

As it is very frequently desirable to know the distribution around the means the following standard deviations, calculated from east Texas and University of Washington data, are given:

The S. D. for each grade, for Grades I, II, III is 1.60 scale units.
The S. D. for each grade, for Grades IV, V, VI, is .83 scale units.
The S. D. for each grade, for Grades VII, VIII, IX, is .89 scale units.
The S. D. for College Seniors and Graduates is .97 scale units.

The large standard deviations in the early grades may be due to large differences in reading ability caused by differences in home training.

The Texas children were tested in the spring with Exercise Alpha and six months later with Exercise Beta. The correlation

between the two tests is .900, and as the time between the tests was material, it shows the very high reliability of the test. The score obtained from Exercises Alpha or Beta may be expected to correlate with the individual's true score, as determined by a very large number of such exercises, to no less an extent than .949 [1] and if both exercises are given, the average score of the two will correlate with an individual's true completion exercise ability to the extent of .974.[1]

In view of the high reliability of this completion test and of its high correlation with so important a function as scholastic standing the writer would highly recommend it.

[1] *Ibid.*, No. 80, p. 74, footnote, explains method of calculation.

DISCUSSION OF PROFESSOR SMITH'S PAPER

By way of addition to the article in the May RECORD on "Mathematics in the Training for Citizenship," by Professor David Eugene Smith, it has been thought advisable to print the following theses. These theses were made the grounds for a discussion of Professor Smith's paper by the Staff of Teachers College in a meeting following the address. Preceding this discussion, Professor Clifford B. Upton, of the department of mathematics, gave a talk, illustrated with lantern slides, to show some of the ways in which the modern teaching of mathematics develops an appreciation and understanding of life about us. The theses follow:

ASSUMPTION

For the sake of discussion it is necessary to presuppose a certain type of high school and of pupil. The following statements refer to a general high school, like the Horace Mann School, where the pupils usually complete the high school course and where there is no one definite vocational aim as would be found in a high school of commerce. Preparation for college is not taken into consideration. The aim is to give what is best for the pupil regardless of the requirements of college entrance. It is further assumed that we shall recognize modern types of subject matter in mathematics and modern methods of teaching it. We should not be governed by impressions of discredited methods.

A. PRESCRIBED AND ELECTIVE COURSES

1. Since the work in mathematics suggested for the Junior High School is informational for the average individual, is largely of a utilitarian character, and serves to determine whether the pupil should pursue the subject further, it should be required of all pupils.

2. The work in mathematics in the Senior High School should be elective, a pupil having the privilege of pursuing this work for

one, two, or three years, either for vocational purposes (commercial, mechanical, household arts, agricultural, etc.) or for the sake of the subject itself.

B. Principles for the Selection of Subject Matter

The subject matter of mathematics should be selected as follows:

1. Such subject matter as is useful in one's daily life in carrying on one's daily duties.
2. Such subject matter as enables one properly to appreciate and interpret the life and the things about one.
3. Such additional subject matter as is necessary for the proper organization of the foregoing and for the further study of the subject.
4. Such subject matter as contributes to one's pleasure or personal satisfaction, including a love of the subject for its own sake. Æsthetic values and high-grade intellectual play are included here.

C. Distribution of Subject Matter

1. In the Junior High School subject matter of types 1 and 2 above will largely predominate with some consideration given to type 3.
2. In the Senior High School subject matter of types 1–4 will be included in the general course, but not necessarily in the vocational courses.
3. In a vocational school type 1 with a little of 2 will predominate.

D. Aims of Instruction

1. The several aims of instruction in mathematics are suggested by the types of subject matter given above in B, 1–4, i. e., utilitarian, appreciative or interpretative, and cultural or æsthetic.
2. In addition, a disciplinary or transfer value is recognized where "disciplinary" is used in the sense of the modern psychologist and refers to the development of habits, ideals, aims, methods of procedure, attitudes of mind, etc., useful in situations other than mathematics.

The various types of subject matter in B, 1–4, afford the necessary material for obtaining this transfer value.

COLLEGE NEWS AND DEPARTMENTAL NOTES

DR. BAGLEY TO BE PROFESSOR OF EDUCATION AT TEACHERS COLLEGE

Dr. William Chandler Bagley, director of the School of Education of the University of Illinois, has been appointed professor of education at Teachers College with a seat in the Faculty of Education.

Professor Bagley is very well known in educational circles by reason of his numerous books and through his connection with the University of Illinois. He was born in Detroit, Michigan, March 15, 1874, and received the degree of B.S. from the Michigan Agricultural College in 1895. This was followed by graduate work in the University of Wisconsin, where Professor Bagley received his M.S. in 1898. From Wisconsin he went to Cornell University, receiving the degree of Ph.D. in 1900 and then served as assistant in psychology for the following year. In 1901–1902 he acted as school principal in St. Louis and was then appointed vice-president and director of training in the Montana State Normal College. In this position he served four years before accepting the superintendency of the training department of the State Normal School at Oswego, New York. Dr. Bagley remained at Oswego two years (1906–1908) and was then offered a professorship in education in the University of Illinois, which he accepted. In the following year (1909) he was made director of the School of Education, a position which he has since occupied. In addition to his university duties Professor Bagley has been joint editor of the *Journal of Educational Psychology* since 1909 and editor of *School and Home Education* since 1912. He is also the author of a number of books on educational problems, among the best known of which are: "The Educative Process" (1905), "Class

Room Management" (1907), "Craftsmanship in Teaching" (1911), "Educational Values" (1911), "Human Behavior"—joint author with Professor S. S. Colvin—(1913), and "School Discipline" (1915). During the year 1911–1912 he acted as president of the National Society for the Study of Education.

At Teachers College it will be Professor Bagley's duty to organize and direct courses relating to normal schools and teacher training. In the training of critic teachers he will be assisted by Miss Margaret E. Noonan, of Harris Teachers College, St. Louis, Mo., and instructor in education, Teachers College. Considerable field work is planned and in addition Dr. Bagley will also carry out his studies for the Carnegie Foundation in the matter of a study of normal schools and the problem of teacher training.

THE LINCOLN SCHOOL STAFF APPOINTMENTS

The following list of appointments to positions on the instructional staff of The Lincoln School has been announced by Dr. Otis W. Caldwell, the director of the School. Some other names are to be added at a later date:

First Grade—Miss Gail Harrison, former teacher in public schools, Santa Barbara, Cal.

Second Grade—Miss Anna J. Gannett, former principal of Brush Hill School, Milton, Mass.; previously teacher in the Bryn Mawr Preparatory School, Baltimore, Md.

Third Grade—Miss Nell C. Curtis, former teacher in the School of Education, University of Chicago; previously principal of the training school for teachers, Streator, Ill.

Fourth, Fifth and Sixth Grades—Miss Jennie Hall, on leave of absence from the Francis Parker School, Chicago, Ill.

Art—Miss Ethelwyn Bradish, former instructor in Teachers College; previously teacher in the Horace Mann High School.

Biological Science and General Science—Mr. Charles W. Finley, former teacher in the State Normal School, Macomb, Ill.

Educational Records—Mr. Chester A. Buckner, former assistant professor, University of Kansas; previously teacher in the High School, Manila, P. I.

English Composition and Literature—Mr. Sterling A. Leonard, former teacher in the Horace Mann School; previously exchange teacher in the higher schools of Danzig, East Prussia.

French—Miss Suzanne Roth, former teacher in the Morris High School, New York City.

Household Arts—Miss Florence Winchell, former teacher in the Ethical Culture School; previously assistant in Teachers College.

Industrial Arts—Mr. A. H. Edgerton, formerly in charge of industrial education at the Canal Zone, Panama; previously at the State Normal School, Charleston, Ill.

Lunchroom and Household Arts and Counsellor for Girls—Miss Helen Hicks, former instructor at the University of Chicago, Chicago, Ill.

Mathematics—Mr. Raleigh Schorling, former teacher in the University of Chicago High School; previously teacher in the Shortridge High School, Indianapolis, Ind.

Physical Education for Boys—Mr. Charles K. Taylor, formerly in charge of physical training at the Speyer School; previously teacher of physical education in the schools of Philadelphia.

Physical Science and General Science—Mr. Earl R. Glenn, former teacher at the Carter H. Harrison Technical High School, Chicago, Ill.; previously teacher at the Froebel School, Gary, Ind.

Physical Training for Girls—Miss Jean Hosford, former teacher in the Horace Mann School; previously teacher in the public school, Danville, Ill.

The Lincoln School, it may be explained, is the name of the new experimental school established in connection with Teachers College and supported by the General Education Board. It will be located at 646 Park Avenue in a building which was originally constructed for the use of a private school. This building is about eight years old and although it is being changed in some respects to fit the particular needs of The Lincoln School, it is not regarded as a permanent location.

During the first year there will be about one hundred and twenty pupils, chiefly in the first, second, and third grades, and the seventh, eighth, and ninth grades. A few pupils in each of the grades four, five, and six will form a group by means of which continuity in plans of work may be secured. This intermediate group and the upper years of the high school will be open for further registrations after the first school year. It is also expected that later there will be a two-year junior college course.

The pupil body accepted is democratic in its composition, in so far as it represents various social and industrial groups. A liberal number of free tuitions have also been provided for those pupils to whose parents the payment of the tuition fee might be a financial inconvenience.

THE STUDENT VOLUNTEER BAND

The professorship of education maintained in the Canton Christian College, China, is a concrete indication of the abiding interest which is taken by the students and faculty of Teachers College in the solution of world problems. The Student Volunteer Band is an agency through which, in another way, the influence of Teachers College will leave its impress on the life of peoples in all parts of the world. This organization has enrolled sixty-five members in Teachers College, of whom thirty-six are, technically speaking, Student Volunteers. The others are returned missionaries who have not signed the declaration card of the Student Volunteer Movement for Foreign Missions; a few persons who have already been in some related activity abroad, or are planning definitely for it; and a number of foreign students who are looking forward to Christian service in their own lands. This composite membership should be kept in mind in making comparisons with data from other schools. To this total membership the School of Education has contributed thirty persons; there are, too, representatives of eleven different countries and of nine distinct religious denominations. This statement in itself will indicate the wide interests and the broad social sympathy which actuate the fifteen men and the fifty women who compose the Band.

The organization of the Student Volunteer Band was perfected early in the fall of 1916. Subsequently working plans for the school year 1916–1917 were formulated as follows:

I. Student Volunteer Meetings

As Student Volunteers we desire in our meetings together (1) to promote personal spiritual power; (2) to acquire information on different phases of missionary work, as specific knowledge of the various fields, current events, the different mission boards and their policies, and the attitude of foreign students toward missions. Hence we shall attend as far as possible the weekly services on Friday mornings from 8:30 to 8:50; the monthly meetings held jointly with the Bands of Columbia University and the Union Theological Seminary; and the regular meeting of the City Union. Further, we shall include in our program meetings of various kinds, keeping the regular weekly meetings chiefly devotional in type, providing definitely for the discussion of topics of importance as suggested above, and inviting to address us from time to time foreign students in Teachers College, missionaries, and outside speakers of note.

II. Activities Among the Students

In order to enlarge our circle of friendships among students who may be interested in considering foreign missions as a life work, to generate missionary enthusiasm, to engage in efficient personal work, and to get in vital touch with missionary problems while still in school, we purpose to meet frequently in worship with other groups; to hold personal conferences with those who are known or thought to be interested in missions; to present the opportunities of the foreign field before the students in public meetings and open meetings of the Student Volunteer Band; to coöperate with the Christian Associations in the organization of social mission study groups among the students in various centers; and to work definitely for the establishing of fraternal relations with foreign students.

III. Publicity

For the purpose of making our Student Volunteer Bulletin Board a real agency for keeping people in touch with missionary problems, we solicit the help of all in securing interesting items of happenings abroad and notices of definite opportunities for service, important articles in magazines, and everything of special interest relating to missionary work. Emphasis is to be laid on concrete items to attract the attention and interest of outsiders.

IV. Literature

We urge volunteer members to utilize the facilities already at hand for a missionary library and reading room and increase the usefulness of this feature by organized effort. We plan to keep on hand an adequate supply of missionary literature for distribution among students interested in foreign missions, the cost of this literature to be provided for by the Band, not by individual members.

V. Extra-College Activities

It is our conviction that every Volunteer should make his life count as a power for good in New York City. Hence we urge that each member affiliate himself with that church in the city in which he can best work, employing such an opportunity for personal evangelism and for generating missionary enthusiasm. Furthermore, we believe that deputation work should have an important place in our activities. Hence we desire to coöperate in any organized deputation work of the City Union, and shall seek opportunities, especially in our own churches, to present the needs and privileges of missionary work. If our deputation work is to be efficient, however, we believe it necessary to organize in the churches to which we go, unless provision is already made for this feature, classes in missionary education.

VI. System of Records

We propose to provide an efficient method of enlisting Volunteers in the work of the year, and to initiate a means whereby a permanent record of

Student Volunteers in Teachers College may be kept from year to year, by providing a card index listing the names of Volunteers, their special interests, service, important items regarding their work in Teachers College, and their subsequent careers.

Nine different committees—on devotional meetings, interschool relations, public meetings, fraternal relations with foreign students, publicity, literature, extra-college activities, records, and student volunteer forums—have been carrying out the work outlined above. A review of these various activities follows:

The Student Volunteer meetings, held regularly on Friday mornings, have included a series on personal evangelism and a number of meetings given over to the study of practical problems on the mission field. The aim of these meetings has been chiefly devotional. During the school semester, weekly forums were held to consider the possible application of different courses in Teachers College to the problems of the work abroad. With this purpose the following subjects have been discussed: The Teaching of Industrial Arts in Elementary Grades, A Course in Child Care for Girls in Mission Schools, Some Problems of Religious Education. Two other meetings have already been planned,—one on the curriculum of girls' high schools and the other on the teaching of biology in foreign lands. At the conclusion of the series, outlines of the principal points and bibliographies are to be prepared for distribution to the members of the Band.

The four joint meetings with the Students Volunteers of Union Theological Seminary have been of especial interest. The first of these was a luncheon, at which Dr. Sailer, of Teachers College, spoke. At the second meeting, held in the red room at Whittier Hall, a Christmas program was given, including addresses by Dr. Fleming, of Union, and Dr. Hitti, of Columbia, and music by the Seminary Glee Club. Dr. Harlan P. Beach, of Yale, was the principal speaker at the third meeting, a St. Valentine's party, given in the social room at the Seminary. The fourth meeting was held early in April, on which occasion Mrs. Thomas S. Donahugh discussed the value of research to foreign missionaries.

Miss Flora L. Robinson, a traveling secretary of the Student Volunteer Movement, visited the College the latter part of

February, and held nearly twenty personal conferences with students during the two days that she was here. Five neighborhood social groups have been organized and have enjoyed glimpses into the lives and works of missionaries in other lands; and in addition there will shortly be presented a consideration of the opportunities now existing for different vocations in the various foreign countries. Through the Cosmopolitan Club, as well as by other means, members of the Band have come into close friendship with the foreign students on the campus. The Christian Associations also have coöperated in the purchase of missionary literature, which may be obtained free of charge by interested students. In addition pamphlet racks are kept filled and a permanent record of the Student Volunteers is provided by a card index kept in the Religious Organizations Room.

EXHIBIT OF SOUTH AMERICAN SCHOOL WORK AT TEACHERS COLLEGE

As a part of the general movement to establish closer and more cordial relations between the United States and our various neighbors in the Western hemisphere an elaborate exhibit of school work from South America has for some time been installed at Teachers College, Columbia University. This exhibit includes the work of pupils in the primary and secondary schools of Argentine, Uruguay, Paraguay, Chile, and Peru. The material was collected by Dr. Peter H. Goldsmith, director of the Pan-American Division of the American Association for International Conciliation, which is a branch of the Carnegie Endowment for International Peace. In gathering this material, Dr. Goldsmith had the coöperation of the ministers of public instruction of each of the countries mentioned.

Among the special features of the exhibit is a collection of artistic baskets made by school children, including several hundred miniature baskets made of hair that are so tiny that 200 of them can be placed in half an egg shell. There are also specimens of woodworking, art metal work, wood carving, bookbinding, and modeling. On the side of textiles there are several elaborate pieces of hand weaving, lace making, and embroidery. The collection is rich in pupils' drawings, maps, compositions,

and studies in science and mathematics. There are also included one or two very interesting specimens of prehistoric pottery and weaving.

Dr. Goldsmith was asked to make a statement regarding those matters which, in his opinion, it was most desirable that teachers in the United States should note in connection with this exhibition. In reply he stated: "This . . . is chiefly intended to give information in order that our teachers and children shall see the actual work done in the schools of the southern countries, not such as was prepared for exhibition. . . . Attention is especially called to the care manifested in penmanship, drawing, designing, etc. A question has been raised as to whether the teachers of the southern countries do not lay too much stress on this aspect of instruction, that is, whether the children, in order to acquire a degree of skill, and nicety of execution, have not used time which should have been devoted to intellectual pursuits. . . . The answer to this is simple: the Latin-American children in general have a facility for work of this character that enables them to accomplish the result with much less instruction and in much less time than would be required . . . among our children. They have something that our children do not have; whether their artistic temperament be an inheritance from Spain and the other south European countries, or whether they have acquired something from the Indians, the fact stands, that with slight instruction they do these things."

THE TEACHERS COLLEGE WOMEN'S 'SUPPER'

As an indication of their willingness to 'Help Hoover' in the general movement to conserve food, and as a protest against the prevailing high prices among New York hotel keepers, the women of Teachers College reduced their usual Summer Session dinner to the more modest dimensions of a 'supper' in the Thompson Gymnasium. Accordingly, on August 13, some three hundred and forty students, together with friends from among the women of the faculty, gathered for this annual opportunity to share each other's hospitality around a common table.

Although the recent developments of national events made this meeting more serious than some of those in the past, yet the

occasion had its lighter side. For this part of the program Miss Louise Price acted as announcer and leader with Miss Elsie L. Suckow in charge of the music. Miss Oread Wetherell entertained her audience with a delightful Spanish dance; and Miss Grace Hazzard sang and played the bagpipe and did an extremely clever quick-change stunt in which she represented episodes from the patriotic past of American war history.

The more formal part of the evening's program was in charge of Miss Margaret E. Noonan, who served as toastmistress. The responses were as follows:

Greeting—Mrs. James E. Russell.

The Work of the New York Food Commission—Professor May B. Van Arsdale.

The Nursing Situation—Professor Mary A. Nutting.

The Standpoint of One Who Felt the Oppression of Prussianism—Miss M. Madelene Veverka.

The group singing, participated in by all the guests, was perhaps the real feature of the evening. In the words of one woman who had herself taken a very active part in arranging for the supper, "There never was such singing before." The climax came with the singing of the *Star Spangled Banner* and the Salute to the Flag.

There were present an unusually large number of faculty women; as guests of honor were also present: Mrs. Frank M. McMurry, Mrs. Paul Monroe, and Mrs. George D. Strayer.

Finally, as a practical token of the patriotism of the women of Teachers College and as evidence of the success of the 'conservation' feature of the supper, the balance of fifty dollars, remaining after the expenses of the occasion were paid for, was donated to the war relief fund of the American Red Cross.

SUMMER SESSION DINNER OF THE MEN IN EDUCATION

Undaunted by the fear of ptomaine, and with the memory of the nine annual performance scores of other days urging them on, some four hundred men of the Summer School threaded the mazes of 125th Street, and climbed the stairs of the West End Restaurant, on the evening of August 3rd, as a preliminary warm-

ing-up process for Dinner Number Ten. After the guests had been comfortably seated, Mr. Kraft settled down to his usual position at the piano and Pickell in his capacity of official barker for the occasion unlocked the word-hoard with a roll-call by states. This proceeded with moderate decorum, punctuated by some clever responses, particularly a 'poem' contributed by North Dakota, until 'Canada' was called. Then there was an outburst of applause that came pretty near being an old-fashioned 'ovation' and showed clearly that the hearts of those present were with our Allies of the North in war as well as in peace.

The stunts next proceeded with a parody by Starkweather who demonstrated how Hamlet might have soliloquized providing he had been a melancholy educator. Judd then assumed his prerogatives as toastmaster and called for nominations for the degree of Doctor of Apulchritude. This, it should be explained, is an extramural degree, which is from time to time bestowed by public opinion upon that member of the Graduate School in Education who shows the highest correlation between good nature and low visibility. The name of Denny of Indiana was put in nomination by Wylie, and for a moment it looked as though the candidate would receive the honor unchallenged. But only for a little—Fellows and Hurt had been coached to start a protest against any such cut and dried nominations and to make a fake appeal to a popular referendum of those present. This they did and to the great relief of Denny and the surprise of Judd the honors were shifted to the shoulders of the toastmaster, who thereupon retaliated by calling upon the first speaker, Dr. George D. Strayer. This initiated the more formal but not altogether serious part of the program of the evening, during which responses were made by Dr. David Snedden of Teachers College; Dr. Otis W. Caldwell, director of The Lincoln School; Edwin L. Holton of Kansas, and Forest C. Ensign of Iowa.

From time to time the speakers were interrupted by snatches of melody, for the most part patriotic songs or topical hits at Teachers College celebrities which were set to some catchy air. Mr. Kraft's original music for the song "Fall In, U. S. A." aroused especial enthusiasm and loud demands for "Author! Author!"

Dean James E. Russell concluded the more formal part of the program with an extended and serious address in which he

pointed out the great changes which the War must necessarily make in educational problems. He indicated that the time had come in which we must demand that for every dollar spent upon the schools there shall result a full measure of patriotism and American citizenship; that the curriculum must be purged of those non-essentials which do not make for democracy; that even intellectual tests must give way for those which recognize character; and that above all society must be guarded against the anarchy that may come with the problems of readjustment after the War. The Dean closed with a tribute to the loyalty of the alumni and a plea to the men of Teachers College to 'Go over the top' to meet the tremendous educational problems of the future.

As a fitting conclusion to the evening, the entire company rose and sang the *Star Spangled Banner*, and followed with the impressive Salute to the Flag.

The success of the occasion was in large part due to the efforts of the committee in charge: F. G. Pickell, chairman; G. W. Kirn, J. E. Marshall, B. D. Remy, J. W. Studebaker, J. W. Gowans, S. G. Noble, and W. A. Denny.

THE HORACE MANN DEMONSTRATION SCHOOL

The prominence given to the Horace Mann Demonstration School in the courses at Teachers College during the summer session is worthy of special note. The courses in theory and practice center much of their work around demonstration lessons taught by the Horace Mann teachers, and the course, Education 810, which is given over wholly to observation in the demonstration school and to the conferences upon related problems, has come to be one of the most important courses in the College. It was first offered three years ago as something of an experiment with the expectation that a small number of students might enroll. About eight hundred students did enroll, and this summer there are more than one thousand taking the course. No medical clinic was ever given more serious attention and study than the students of the summer sessions have given to the demonstration teaching in the Horace Mann School during the past three summers. The admirable professional spirit of the

demonstration teachers has been shown by their readiness to expose their work to constant criticism.

On another page will be found a brief account of the demonstration courses in junior high school English.

EDUCATIONAL ADMINISTRATION

To the somewhat extensive list of school surveys undertaken by the department of educational administration there has now been added a building survey of Omaha, Neb., directed by Professor George D. Strayer with the assistance of Mr. N. L. Engelhardt and Mr. F. W. Hart, associates in the department. The work was done during the month of June, and included recommendations regarding the building of intermediate schools and a new commercial technical high school; altogether a program was advised which covered a period of fifteen years and involved the expenditure of $5,000,000. The location of future buildings was determined by means of a very careful estimate of the probable increase in population and its distribution throughout the city.

As an additional chapter to the account of the St. Paul survey, which was undertaken during January and February, might be added the statement that at an election held in St. Paul in June, it was voted to carry out the recommendations of the survey and $3,000,000 was accordingly appropriated to be available during the next five years in amounts of $600,000 annually.

There has very recently been published the report of the survey of Great Neck, Nassau County, N. Y. The work for this was done by Professor Strayer and Mr. M. G. Neale, formerly assistant state superintendent of schools for Missouri, sometime graduate student at Teachers College, and now second lieutenant in a New York Regiment. Quite aside from its value as an educational document the unusually satisfactory format of the survey as published is worth noting.

ELEMENTARY EDUCATION

Much interest has been shown by the students in elementary education in the matter of experimental teaching as a factor in effective supervision. Many interesting experiments in teaching

have been conducted by the students of this department during the past two years. Reports of these experiments are on file in Room 203 Teachers College, and are accessible, if any one interested in this field of experimentation desires to read them there. It is the thought of the department that it shall become a sort of clearing-house to which teachers and supervisors experimenting with problems in teaching may turn for suggestions and through which they might exchange reports of their work. However, this arrangement for persons at a distance from the College has not as yet been made.

In the teaching experiments conducted under the supervision of the department of elementary education, extensive use has been made of the various standardized tests and scales. More and more does it seem to the members of this department that the greatest good to come from the use of these measurements is in those cases in which they are used by the classroom teachers as they work upon specific problems in teaching. The psychological effect upon teachers whose work is frequently measured by instruments unfamiliar to them, seems bad. But when a teacher makes use of a test or a scale in the process of solving some of her own problems she comes to have an intelligent and wholesome appreciation of it; she understands its value and its limitations. Like all new inventions or discoveries, in spite of their great worth, the standard tests are in danger of mis-use in the hands of supervisors and administrators who become too enthusiastic over mere testing. In such instances, the attention of the teaching force is likely to be centered upon the more mechanical phases of the work, and they are apt to lose sight of the higher values. Therefore, it is highly desirable that all teachers be encouraged to familiarize themselves with standardized tests and scales by using them in evaluating their own work and in measuring results in their own experimental teaching.

Miss Laura A. Gillmore, who has been a teacher in the Speyer School and more recently in the Horace Mann School, will leave New York City in September to enter upon her new position as teacher and supervisor of the elementary department of a new private school in Dayton, Ohio.

Mr. Louis Mohler, who has been a graduate student at Teachers College, is preparing a set of picture studies for the Elson

Company of Boston, in which closely coördinated literary studies are included, and a series of individual leaflets developed from a method that is the result of several years of testing and experimentation.

ENGLISH

THE DEMONSTRATION COURSES IN JUNIOR HIGH SCHOOL ENGLISH

The aims of English teaching in the junior high school are admirably stated in the new Committee of Thirty Report on Reorganization of Secondary English (U. S. Bureau of Education, Bulletin No. 2, 1917). In the demonstration school of the 1917 Summer Session the English courses, as taught by Mr. Sterling A. Leonard and Professor James F. Hosic, were directed toward achieving these purposes mainly in these ways:

First, as one of various methods used for helping children realize and interpret what they read, rough dramatizations of scenes from "Rip Van Winkle" and "Silas Marner" were given. Nothing in the way of a finished performance was sought, but simply the children's spontaneous expression of their ideas of characters and events. In this, as in all the work, the attempt was made to have the class read and discuss and compose, so far as possible, in the process of carrying out projects which they themselves considered worth their while, and which they often initiated themselves, rather than in merely fulfilling set tasks or solving assigned problems.

The attempt was made to direct the class criticism of these projects towards intelligent evaluation of them—particularly of the planning of stories or presentations of opinion. Finally, a good part of the time, in the two lower years especially, was given up to drill work which should help the pupils in the difficult business of proofreading their own writing before giving it to any one else to read, and should result in the establishment in habit of a very few essential correct forms—most of all, the unfailing recognition and correct marking of the sentence.

INDUSTRIAL ARTS

A very successful course in concrete construction was given in the Summer Session through the coöperation of the American

Portland Cement Association which furnished a number of its most expert workers as teachers.

Professor Charles C. Sleffel, formerly assistant professor of industrial arts in Teachers College, and now of the School of Engineering of Columbia University, is wearing the uniform of a second lieutenant and is engaged in the instruction of engineers for the coast defense service.

Mrs. Lois Coffey-Mossman, who was instructor in industrial arts in Teachers College in 1911–1913, is again associated with the College as instructor, her work being divided between industrial arts and elementary education. Mr. Mossman will teach in Leonia, New Jersey, during the coming school year.

MATHEMATICS

During the absence of Professors Smith and Upton, the work in mathematics for the Summer Session was in charge of Mr. W. E. Breckenridge of the department. With him was associated Dr. George Sarton who offered courses in the history of science and mathematics. Dr. Sarton is a native of Belgium, who, together with his wife and daughter, was compelled to leave that country on its invasion by Germany. He is at present lecturer on the history of science at Harvard University and was Lowell Institute lecturer for 1916.

Considerable attention was devoted during the Summer Session to the mathematics of the junior high school. There was also given some unusually timely work in the mathematics of warfare, especially as used by the Artillery Corps. In this course problems were worked out with a 70 cm. range-finder, the product of Zeiss of Jena, and a temporary loan to Teachers College through the courtesy of Bausch and Lomb of Rochester, N. Y.

The making of a mathematical scale was also taken up and an interesting corroboration was obtained for Professor Thorndike's experiment of 1913 on grading problems in algebra. In this original experiment two hundred teachers, of New York City and vicinity, took part; in the experiment as given during the Summer Session of 1917 some fifty experienced teachers, representing all parts of the United States, participated. The results showed that for the statistical parts of the two experiments the conclusions were identical.

RURAL EDUCATION

The rural education group for the 1917 Summer Session celebrated their fellowship with one another by a trip to Coney Island on the fifth of August, this being the least rural of all possible adventures they could take.

Miss Mabel Carney will next year be added to the teaching force in rural education. She brings to it an ample field experience, having served as a county school teacher in Illinois, teacher and extension worker in a state normal school, and state organizer of rural schools in Washington. She has also been for two years in charge of the high school system of training rural teachers in Minnesota. Miss Carney will offer three courses: one in Organization and Administration with Professor Strayer, one in Curriculum with Professor Bonser, and one in Training of Rural Teachers with Miss Lovsnes.

Miss Lovsnes, instructor in the department, was engaged during June in teaching a model county school at Hagerstown, Md., with forty city children with whom to demonstrate to a large class of teachers. She rendered similar service at Ocean City in the latter part of August.

Dr. Wilson was invited to attend institutes after the close of summer school in Centerville, Md., under the direction of Miss Hannah Kieffer of the class of 1915; and in Erie County, Ohio, under the direction of Mr. R. E. Offenhauer of the class of 1914.

Professor E. L. Holton, of the State College of Agriculture of Kansas, has conducted the class in Rural School Organization and Administration through the summer. It was at first announced by the director that this class would be dropped, but in view of the fact that so many students who were professionally interested desired the course continued, it was thought advisable to comply with their wishes.

THE LIBRARY IN SUMMER SESSION

One of the serious problems in Summer School administration at Teachers College has been to provide adequate facilities at the delivery desk in Bryson Library for the thousands of busy readers for whose needs provision must be made. This problem

was in part solved for the Summer Session which has just closed by the temporary installation of a delivery desk at which fifty or more applicants for books could secure front line positions at the same time. This together with the employment of additional library assistance did considerable to relieve 'traffic congestion'. There has also been opened in the Practical Arts Library a special room for the use of graduate students and to which admission is by card only.

The administration seminar room on the second floor, which has been open for the past year, has also served to house a considerable proportion of the library population of the graduate school.

The total 'over-night' circulation of books for the year ending July 1 was for the Practical Arts Library, 30,902; and for Bryson Library, 49,883. For this Summer Session alone the Bryson circulation was 12,037, almost one-fourth of the total for the preceding year. None of these figures includes the very much larger number of books which circulated in the reading rooms during library hours and were not counted as for 'home use'.

THE FRIDAY FORUM AND THE Y. M. C. A.

Through the agency of the Friday Forum, the Y. M. C. A. has been providing the men of Teachers College with an opportunity to hear discussions upon various matters of timely interest. Thus on August 1, Dean Russell spoke on "An Educator's Service in War Time." In spite of the great heat the meeting was well attended and aroused considerable interest. Professor Monroe addressed the Forum on August 10 on the topic "Moral and Religious Conservation in War Time," a question of peculiar interest to the men who will be engaged in welfare movements of various sorts.

Mr. F. C. Touton, vice-president of the Y. M. C. A. at Teachers College, will succeed Mr. J. L. Dunkle as president of the organization, due to the fact that the latter has accepted a position for the coming year in the Maryland State Normal School. Mr. Touton plans to secure various speakers for the Friday Forum who are experts in the discussion of those questions arising from the present general disturbance of the religious and

moral life of the community. These discussions will be open to all the men in the University who may be interested.

HOUSEHOLD ECONOMICS

Professor Benjamin R. Andrews was called to Washington June 1 by the Department of Agriculture for emergency service as 'Specialist in Household Thrift' and administrative assistant to the Chief of the Office of Home Economics. Dr. Andrews has served as representative of the Department on an Interdepartment Committee representing the Department of Agriculture, the Department of the Interior, and the Food Administration to prepare a syllabus of ten lectures on Food Conservation to be delivered in all the summer schools of the country.

A brief account of these lectures is given in the statement of the activities of the United States Food Conservation Bureau printed below.

In connection with the Office of Home Economics Dr. Andrews has, in association with Dr. Langworthy, chief of the office, been responsible for plans for a National Dietary Survey which is to be one factor in the National Food Survey undertaken by the Department of Agriculture. The Food Survey will inventory the food stock of the country, taking account of producers' stocks and supplies in the hands of wholesalers and retailers, and also household stocks of food. The latter is to be ascertained by inventories of food on hand in some 10,000 homes in various sections of the country. In from 1,500 to 2,000 homes it is intended to secure a very detailed record of the food situation by what is known as a 'dietary study', and it is the plans for these home dietary studies which Dr. Andrews has been developing. Each separate study involves an accurate record of the food consumption for a week by the family with measures of food waste. The facts are secured by an investigator who visits the home daily, taking an inventory of the food on hand at the beginning of the week and at the end, with daily measuring of all food brought into the house and of all food waste. Such dietary studies yielding accurate facts as to the food consumed in various sections of the country, where local food supply, racial habits, and other factors make for differences in food use, will, it is expected, give the infor-

mation needed in order to administer wisely our food resources for the best advantage of the Allied cause. Similar studies made years ago by the U. S. Department of Agriculture have served as guides for the food programs in European countries, and these new and more extensive dietary studies will bring the facts up to date after a period when changes in prices and in food supply are known to have shifted the emphasis as to the relative proportions of different kinds of food consumed.

In the absence of Professor Andrews for the summer his courses were given by Miss Matilda McKeown, formerly of the department of household administration, Teachers College.

There has just come from the press the second volume of Lippincott's Home Manual series of text-books in household arts, which are under the editorship of Professor Andrews. This volume is entitled "Successful Canning and Preserving" and is written by Miss Ola Powell, assistant in home demonstration work of the United States Department of Agriculture. The first book in the series, "Clothing for Women," by Miss Laura Baldt, of Teachers College, has already met with a wide acceptance.

TEACHERS COLLEGE RECORD TO AID IN NATIONAL MOVEMENT FOR FOOD CONSERVATION

In response to a request from the United States Food Administration at Washington, D. C., the RECORD, together with a number of the leading educational journals of the country, will each issue present to its readers information of importance concerning the food conservation program now being initiated by the National Government. Accordingly, the following bulletin, which is of especial interest to all teachers, is here printed. Attention is also directed to the article on the preceding page in which is given an account of the work of Professor Benjamin R. Andrews, of the department of household arts, Teachers College, who is now engaged in research for the Food Administration.

United States Food Administration
Food Conservation Bureau
Elementary and Secondary Education

In planning its campaign the Food Conservation Bureau of the United States Food Administration has realized the importance of the public school as a medium for the dissemination of the ideas which are "to modify the food habits of the one hundred million of our people." It has therefore sought the coöperation of state universities and colleges in order to have the food conservation program reach as large a number of students as possible. A ten-lesson course in conservation was prepared by a committee of domestic science experts, among whom the Department of Agriculture, the Bureau of Education and the United States Food Administration were represented. Every state, except one where there was no summer school, was organized, and coöperation was universally cordial. Six hundred and thirty-three schools received copies of the course, and several hundred thousand students were reached.

In addition to giving the ten-lesson course to summer schools, teachers' institutes were asked to aid in the work. Letters were written to state superintendents, to presidents of state universities and agricultural colleges, and to county commissioners, and to each of these a food conservation syllabus was sent. Replies to date have shown enthusiastic coöperation. During the first week there were requests for 28,000 copies of the lessons for institutes held during August, and requests since then have more than doubled that number.

Of the first edition of these lessons, Numbers I–V, there have been distributed 12,000 copies; of numbers VI–X, 10,000 copies. With these have been distributed 145,000 broadsides on food conservation. A new edition of 400,000 copies of Lessons I–X, inclusive, in one pamphlet, is in press, and orders have already been received for more than half the edition.

With a realization of the enduring need of a conservation program on a broad and fundamental basis the United States Food Administration is planning with the coöperation of the Bureau of Education to place in the schools a course of study which shall be incorporated not as an emergency measure, but as

a permanent problem and integral part of our freshened educational aims.

The Bureau of Education will therefore publish, on the first of October and each month thereafter up to June, a bulletin of family and civic economics. The material will be in the form of reading and study courses for elementary and high school grades, and will cover all the topics that enter into community life. These lessons are intended to stimulate closer coöperation between the school and the community in general in solving the problems of our democracy.

Professor Charles H. Judd, dean of the School of Education at the University of Chicago, has charge of the preparation of these lessons. Under his supervision, a staff of experienced teachers and educational editors will collect and arrange the necessary material.

All teachers who wish to obtain copies of these lessons, together with all subsequent material, may address their inquiries to: The Director of Elementary and Secondary Schools, Department of Food Conservation, Washington, D. C.

PROFESSOR MÉRAS RECEIVES OFFICER'S COMMISSION

Dr. Albert A. Méras, assistant professor of French, who was in attendance at Plattsburg during the early part of the summer, has recently been commissioned a captain in the Officers Reserve Corps. During the Summer Session, Professor Méras' classes were taken by his father, Baptiste Méras, director of Stern's School of Languages, New York City.

ALUMNI ACTIVITIES

TEACHERS COLLEGE STUDENTS IN GOVERNMENT SERVICE

Teachers College men and women are doing their part in the War. Since last June some fifteen or more have added their names to the list of the alumni and former students of the College who have actively taken up the work of the War in one capacity or another. Their names and the branches of the government service in which they are serving are as follows:

Miss Alice Atwood, Johns Hopkins Red Cross Unit, France.
Mr. John Burns, Officers Training Corps.
Mr. E. P. Curtis, American Ambulance Corps, No. 10.
Mr. Orlando d'Amato, Illinois Medical Reserve Corps.
Mr. Terrence Gilbert, Officers Training Corps.
Mr. J. A. C. Lewis, Officers Training Corps.
Mr. Theodore Martin, Ambulance Unit, France.
Mr. H. H. Morris, Officers Training Corps.
Miss Sarah Pettee, Mackey-Roosevelt Unit, U. S. Army Base Hospital, France.
Mr. William H. Roberts, Second Lieutenant, Field Artillery, Officers Reserve Corps.
Mr. Alphonse Sarré, United States Army Ambulance Corps.
Mr. W. P. Tomlinson, Army and Navy Y. M. C. A., Newport, R. I.
Mr. Joseph Vertrees, Officers Training Corps, Ft. Snelling, Minnesota.
Mr. C. E. Moore, Officers Training Corps.
Mr. M. G. Neale, Second Lieutenant, Officers Reserve Corps.
Mr. Walter T. Woody, Army and Navy Y. M. C. A., Newport, R. I.

The Secretary of the College is very desirous of keeping in touch with all Alumni who are enrolled in any branch of Govern-

ment service or war relief. Readers of THE RECORD will aid greatly in this matter if they will communicate all such information to Professor C. B. Upton, Teachers College.

TEACHERS COLLEGE STUDENTS WITH THE NEW YORK CITY FOOD AID COMMITTEE

The following Teachers College students are at present engaged in either district organization or demonstration work for the New York City Food Aid Committee: Miss Edith Barber, Miss C. A. Barton, Miss Helen Bishop, Miss Corinne B. Bray, Miss Mollie Gold, Miss Margaret Hartnett, Miss Josephine Huntington, Miss Elizabeth Hinchman, Miss Eleanor Johnston, Miss Dorothy Kirk, Miss Eleanor Little, Mrs. Mathilda Schroeder Liftman, Miss Mildred Memory, Miss C. Moore, Miss Sarah Oller, Miss Katherine Reigart, Miss Anne Schultz, Miss Mabel Tallant, Miss Leonore Vander Sloot, Miss Jessie Winchell, Miss Dorothy Zeman.

TREASURER OF THE ALUMNI ASSOCIATION RECEIVES OFFICER'S COMMISSION

Dr. Marion R. Trabue, assistant professor of education in Teachers College and treasurer of the Alumni Association, has been commissioned a second lieutenant in the Sanitary Corps of the Officers Reserve. Dr. Trabue will do psychological testing upon the recruits of the new National Army, and will be stationed 'somewhere in the South'. He will work under the direction of Professor R. M. Yerkes, of the University of Minnesota, who has recently been commissioned a major and is in charge of much of the psychological testing for the new army.

Members of the Alumni Association may still address communications to Dr. Trabue at Teachers College.

DR. WILLIAM F. RUSSELL TO BE DEAN OF EDUCATION AT THE UNIVERSITY OF IOWA

William Fletcher Russell, Ph.D., the son of Dean Russell of Teachers College, and professor of secondary education at Pea-

body College, Nashville, Tennessee, has recently been appointed dean of the college of education of the University of Iowa.

Dr. Russell, who will enjoy the distinction of being one of the youngest deans in the United States, graduated from Cornell University in 1910 with the degree of A.B., and received his Ph.D. from Columbia in 1914. During 1910–1911, Dr. Russell acted as teacher of history and economics in the College High School at Greeley, Colorado, and the following year served as assistant professor of history and sociology in the State Teachers College of Colorado at Greeley. In 1914 he accepted an associate professorship in secondary education at Peabody College, and in 1915 was advanced to a full professorship. Dr. Russell is also the author of "The Early Teaching of History in New York and Massachusetts" (1915), and "Economy in Secondary Education" (1916). In addition to these, he contributed the section on the "United States" in Sandiford's "Comparative Education" (1917).

ARTHUR R. SPAID ELECTED STATE COMMISSIONER OF DELAWARE

Mr. Arthur R. Spaid, who has been a graduate student at Teachers College for the past year, has been elected state commissioner of education of Delaware. Mr. Spaid is well known in educational circles in Delaware where he was county superintendent of New Castle County from 1903 to 1913. From this position he went to the superintendency of Dorchester County, in Maryland.

TEACHERS COLLEGE CLUB OF BUFFALO

Some twenty-five men and women, alumni of Teachers College now living in Buffalo or the vicinity, showed their appreciation of the College and of Professor David Snedden by attending a conference and dinner at Buffalo, on the evening of June 2. Dr. Snedden spoke informally at the dinner, and later in the evening delivered an address. Again on the afternoon of June 4, Professor Snedden spoke before the students of the State Normal School. A large part of the success of both occasions was due

to Professor D. J. MacDougall, of the State Normal School, who is one of the organizers and active forces in the Buffalo Club.

APPOINTMENTS

In addition to those names mentioned in the May RECORD the following appointments have been announced for the school year 1917–1918:

Miss Katherine P. Abell, director of kindergarten, Port Chester, N. Y., public schools.

Miss Sherred Adams, principal of private school, Trenton, N. J.

Miss Grace I. Atkinson, teacher of fourth grade, Ethical Culture School, New York City.

Miss Edna I. Avery, instructor in home economics, University of Cincinnati, Cincinnati, Ohio.

Miss Mildred Ballou, kindergarten teacher, Unquowa School, Bridgeport, Conn.

Miss Henrietta O. Bard, teacher in intermediate department, National Cathedral School, Washington, D. C.

Mrs. Janie R. Bigelow, kindergarten supervisor, Mills Kindergarten, Columbia, S. C.

Mrs. Jessie Boys, instructor in department of extension cookery, Cornell University, Ithaca, N. Y.

Miss Ethelwyn Bradish, instructor in fine arts, Lincoln School, New York City.

Miss Anne T. Brewer, head of intermediate department, Hathaway-Brown School, Cleveland, Ohio.

Mr. Orville Brim, head of new department of rural education, Winthrop Normal and Industrial College, Rock Hill, S. C.

Mr. Wm. H. Burton, assistant in education, Oregon Normal School, Monmouth, Oregon.

Miss Nelle J. Campbell, in extension work for New London, Connecticut Agricultural College, Storrs.

Mr. Kenneth Carman, assistant superintendent in charge of vocational education, Richmond, Ind.

Mr. A. W. Castle, assistant superintendent of schools, Cleveland, Ohio.

Mr. Emerson T. Cockrell, principal of high school, Newton, Iowa.

Miss Elizabeth V. Colburn, instructor in fine arts, Lakewood, Ohio.

Miss Hope Coolidge, instructor in dietetics, State Normal College, Greensboro, N. C.

Miss Lucy Cordiner, instructor in extension work in home economics, University of Minnesota.

Miss Helen Corley, instructor in high school, Bridgeport, Connecticut.

Miss Genevieve Coy, instructor in psychology, Ohio State University, Columbus, Ohio.

Miss Edith A. Crane, director of residence, University of Kentucky, Lexington, Ky.

Miss Mabel Crawford, instructor in fine arts, Scarborough School, Scarborough. N. Y.

Miss Helen Lee Davis, associate professor of home economics, Oregon Agricultural College, Corvallis, Ore.

Miss Mary D. Davis, teacher in first grade, public schools, Leonia, N. J.

Miss Martha Dinwiddie, district agent, home economics, Virginia.

Mr. Henry F. Dunbar, instructor in physics and chemistry, high school, Kingston N. Y.

Miss Gertrude Dustin, head of domestic science department, Temple University, Philadelphia, Pa.

Miss Gertrude Earhart, superintendent of training school, State Normal School, Bellingham, Wash.

Mr. Alanson Edgerton, instructor in industrial arts, Lincoln School, New York City.

Miss Alice Edwards, instructor in nutrition, University of Minnesota, St. Paul, Minn.

Miss Marion Feeley, critic, third and fourth grades, State Normal School, Johnson, Vt.

Mr. Emery N. Ferriss, instructor in secondary education, University of Oklahoma, Norman, Okla.

Miss Juanita H. Floyd, head of department of modern languages, Stephens College, Columbia, Mo.

Miss Ethel Folwell, instructor in Latin, Miss Pond's School, Newark, N. J.

Miss Anna J. Gannett, teacher in second grade, Lincoln School, New York City.

Mr. F. M. Garver, headmaster, Oak Lane Country Day School, Philadelphia.

Miss Almyra Gaylord, kindergarten director, Bridgeport, Conn.

Miss Clara B. Gilbert, teacher in third grade, Scarborough School, Scarborough, N. Y.

Miss Claire Goldsmith, assistant kindergarten teacher, Day School of St. Agnes Chapel, New York City.

Miss Edith M. Gordon, home demonstration agent, Bristol County Agricultural School, Segreganset, Mass.

Miss Gladys Hanson, kindergarten teacher, Oak Lane Country Day School, Philadelphia, Pa.

Miss Fannie Harman, teacher in elementary grades, Stonewall Jackson College, Abingdon, Va.

Miss Ellen Hillstrom, instructor in fine arts, University of Wisconsin, Madison, Wis.

Miss Jean Hosford, instructor in physical education, Lincoln School, New York City.

Miss Emma R. Hunt, instructor in French and Spanish, Girls High School, Atlanta, Georgia.

Miss Theodosia Jessup, instructor in English, Smith College, Northampton, Mass.

Mr. R. G. Jones, deputy superintendent of schools, Cleveland, Ohio.

Miss Myrtle Kaufman, supervisor of grades, Janesville, Wisconsin.

Miss Florence Kenway, instructor in home economics, Milwaukee-Downer College, Milwaukee, Wis.

Miss Ethel Kilts, primary training teacher, State Normal School, Oswego, N. Y.

Miss Arabella I. Kramer, model teacher, first and second grades, Temple University, Philadelphia, Pa.

Miss Mary Laycock, instructor in English in model school, University of North Dakota.

Mr. Sterling Leonard, instructor in English, Lincoln School, New York City.

Miss Gertrude Longley, instructor in household arts, University of Cincinnati, Cincinnati, Ohio.

Mr. J. W. McClinton, superintendent of schools, Pueblo, Col.

Miss Louise McDanell, associate professor of home economics, Goucher College, Baltimore, Md.

Mr. E. G. McGehee, superintendent of schools, LaFayette, Ala.

Miss Mathilda McGownd, instructor in physical education, State Normal School, Cape Girardeau, Mo.

Miss Florence McLouth, second grade critic, State Normal College, Ypsilanti, Mich.

Mr. W. B. McMillan, supervising principal, Chatham, N. J.

Mr. J. Cayce Morrison, supervising principal, Leonia, N. J.

Mr. Robert Morrow, superintendent of schools, Orange City, Ia.

Miss Louise B. Moss, head of department of home economics, State Normal School, Willimantic, Conn.

Miss Elizabeth Nickerson, in extension work in home economics, University of Minnesota, St. Paul, Minn.

Mr. Arthur F. Payne, director of vocational education, Johnstown, Pa.

Mr. Frank Pickell, principal of high school, Lincoln, Nebr.

Miss Lulu Pickett, first and second grade critic, State Normal School, Johnson, Vt.

Miss Henrietta Pribnow, supervisor of home economics, Oshkosh, Wisconsin, public schools.

Miss Charlotte Richardson, assistant supervisor of industrial arts, public schools, Duluth, Minn.

Miss Estelle Roe, principal and director of playground, Orthopaedic Hospital, White Plains, N. Y.

Miss Margaret F. Rogers, first grade critic, Virginia State Normal School, Harrisonburg, Va.

Mr. H. T. Ruhl, director of boys and girls club work, State of Delaware.

Miss May Secrest, in extension work in home economics, University of Minnesota, St. Paul, Minn.

Miss Ethel Sexton, teacher of third and fourth grades, Miss Chandor's School, New York City.

Miss Florence Slayton, teacher of seventh and eighth grades, public schools, Cranford, N. J.

Mr. James A. Starkweather, principal, junior high school, Duluth, Minn.

Mr. V. L. Strickland, in extension work in education, State Agricultural College, Manhattan, Kan.

Mr. Charles C. Tillinghast, principal of high school, Framingham, Mass.

Miss Mary C. Waite, teacher of kindergarten and first grade, Social Motive School, New York City.

Miss M. Frances Warren, teacher and supervisor of geography and history, Scarborough School, Scarborough, N. Y.

Miss Sarah Jane Weber, instructor in domestic science, Carnegie Institute of Technology, Pittsburgh, Pa.

Miss Estelle Weeks, statistician, United States Rubber Company, New York City.

Miss Minnie J. Wilson, seventh and eighth grade critic, State Normal School, LaCrosse, Wis.